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**Restructuring
the
Electric Industry**

This publication presents information for analyzing and assessing the need for restructuring the electric industry in Minnesota. It is an updated and expanded version of the December 1995 report.

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Summary

Around the country and in Minnesota, policymakers are under pressure to “restructure” or deregulate the electric industry. Under the current industry structure, electric services are provided to retail customers by utilities who have geographic monopolies on the provision of electric services within their service territories. Customers within a utility’s service territory must purchase all of their electric services from that utility. Essentially, the restructuring debate is over whether and how to separate the generation of electricity from other electric services in order to allow retail customers to shop for the electricity supplier of their choice. Under such a scenario, distribution and transmission services, as well as most other electric services, would continue to be regulated and provided by the utility.

This report first analyzes some issues and options involved in the restructuring debate, and then describes the present and historical context for competition in the electric industry.

1. A Discussion of Restructuring Issues and Options

The first chapter discusses various issues and options facing policymakers charged with determining whether and how to restructure the electric industry. Among the issues defined and then briefly discussed are market structure, utility taxation, stranded costs, universal service, pilot programs and environmental issues. Then, several options are presented, with some pros and cons raised by each option. The options are: 1) Take No Action; 2) Establish Guiding Principles; 3) Encourage Wholesale Competition; 4) Test, Study and Evaluate; and 5) Authorize Retail Competition.

2. The Traditional Rationale for Regulation

The second chapter informs those unfamiliar with the issue about the traditional rationale for regulation. It describes the structure and key participants of the electric industry in Minnesota. The provision of electric services has traditionally been considered a “natural monopoly,” and has been sold to retail customers as a “bundle” incorporating all of these services.

According to economic theory, a natural monopoly exists if one service provider in the market can serve customers more efficiently than many competing service providers. In markets exhibiting the characteristics of a natural monopoly market, government intervention in the form of regulation of the single service provider is considered necessary to provide the market discipline that competition cannot provide.

However, many believe that the generation service need not be provided as part of the bundle. Instead, these observers contend that retail customers should be allowed to purchase generation in an open, competitive market, separate from transmission, distribution and other electric services. This assertion is quite controversial, raising the many questions discussed in chapter one.

3. The Regulatory Context for Competition

The third chapter discusses the regulatory context for competition and the steps that have been taken at both the state and federal level to encourage wholesale competition. On the federal level, this chapter examines the Public Utilities Regulatory Policies Act of 1978, the Energy Policy Act of 1992, and the Federal Energy Regulatory Commission's recent Order 888. On the state level, regulators, utilities and legislators have introduced competition into the Minnesota electric industry by encouraging generation by non-utilities; authorizing utilities to offer competitive rates to retain customers; and instituting competitive bidding for new generation capacity.

4. Rate Setting in a Competitive Environment

The final chapter reviews the debate concerning the replacement of traditional cost-based regulation with various types of incentive regulation, including performance-based regulation. Incentive regulation refers to a variety of regulatory approaches that attempt to provide or enhance incentives for utilities to operate more efficiently. Proponents of incentive regulation argue that cost-based regulation results in inefficiently operated utilities and inflated prices to customers.

However, critics respond that an over-emphasis on incentive regulation can lead to inflated returns to utility shareholders and declines in the quality of utility service. In addition, some economists argue that incentive regulation can be anti-competitive, by allowing incumbent utilities to reduce prices to a predatory levels, thereby reducing the number of potential competitors in an open market.

A glossary at the end of this report defines the terms used. ♦

Chapter 1

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This report contains four chapters. Readers who are already familiar with the electric industry and its history may begin immediately with a discussion of the issues of restructuring and the various options for policymakers. Chapters two through four provide extensive background for those readers wishing to familiarize themselves with the structure of the industry, its key players, and the historical context for the restructuring debate. A glossary of terms used in this report follows chapter four.

Readers already familiar with the electric industry can begin with chapter one. Chapters two through four provide extensive background on the industry. There is a glossary at the end of the report.

Under the current industry structure, electricity is provided to retail customers by utilities who have geographic monopolies on the provision of electric services within their service territories. Customers within a utility's service territory must purchase all of their electric services from that utility.¹ Essentially, the restructuring debate is over whether and how to separate the generation of electricity from other electric services, in order to allow retail customers to shop for the electricity supplier of their choice. Under such a scenario, distribution and transmission services, as well as most other electric services, would continue to be regulated and provided by the utility.

Restructuring Issues

Any consideration of whether and how to restructure or deregulate the electric industry raises several issues. This section discusses a few of them.

Market Structure

In order for competitive forces to effectively provide beneficial competition, the electricity market (or any deregulated segment) must have a competitive market structure. The market must be able to support many comparable sellers competing to serve many comparable buyers. If a dominant seller or a dominant buyer emerges in the market and is able to exert power over the market, the benefits of competition will be reduced or perhaps negated. Policymakers should ask what the expected characteristics of a deregulated market for electricity will be.

¹ These services include generation, transmission, distribution, as well as customer service, meter reading, demand-side management, aggregation and ancillary services, among many others.

For example:

- Will the market have few or several suppliers?
- What will their respective market shares be?
- Will a single buyer or class of buyers be able to dominate the market?
- What regulatory or legal protections will exist to constrain the activities of market participants to allow a competitive marketplace for generation to flourish?

If the structure of any deregulated portion of the electricity market cannot support a competitive marketplace, then utility regulation may be able to provide the "benefits of competition" in this market better than competition itself.

Competitive Parity

A level playing field for competitors is crucial to developing a competitive electricity market in Minnesota. Ensuring competitive parity will be extremely difficult, given the array of potential

Establishing a competitively neutral electricity market will be important for encouraging effective and efficient competition.

competitors: there are nearly 200 utilities in the state, with a variety of corporate structures and dramatically differing tax and regulatory requirements. In addition to these, unregulated entities such as power brokers and marketers (some independent and some

affiliated with existing regulated entities), and an increasing number of non-utility generators seek to serve Minnesota's electric needs. Sorting out these differences and developing an industry structure that treats the various parties equitably is a monumental task.

Utility Taxation

Policymakers will be asked to "level the playing field" in the area of utility taxation, especially the tax on personal property and attached machinery. Currently, some electric generation facilities are subject to this tax but others are not.² Non-utility generation facilities, such as the cogeneration facility proposed by Koch Refinery, are subject to this tax, unless the facility qualifies for an exemption based on the facility's efficiency.

² IOUs are subject to this tax on almost all of their personal property, except that distribution lines providing electric service to farmers are exempt. Munis are generally exempt from this tax. G&Ts are generally subject to the tax. Distribution co-ops are generally exempt, unless the co-ops' facilities are located within an incorporated area. MPAs, Munis and exempt Co-ops make payments "in lieu" of personal property taxes. Co-ops pay ten cents for each customer meter, and Munis negotiate payments to their municipalities. In addition, since both Co-ops and Munis buy their power at wholesale from taxed entities (IOUs, G&T Co-ops, MPAs), a portion of the tax levied on their wholesale suppliers is passed on to Co-op and Muni retail customers.

The MDPS estimates that three of the largest IOUs and two of the largest G&T Co-ops pay over \$170 million in additional taxes, in contrast to non-utility businesses not subject to the personal property tax. Because some entities are subject to this tax, while others are not, critics of the current taxing scheme charge that the personal property tax will artificially increase the cost of electricity generated by an entity subject to the tax. This result could provide an unfair competitive advantage for electricity generated by an untaxed entity, either one located within the state, or a competitor from another state.

Another criticism of the personal property tax on utility machinery is its large role in the location decision of a new generation facility, a point emphasized by Koch Refinery during the 1996 legislative session. New jobs and additional economic benefits may be lost to other states, such as Wisconsin, which do not impose a personal property tax on generation equipment.

The 1996 Legislature directed the Minnesota Department of Revenue to analyze the structure of the current utility tax scheme in the state, compare Minnesota utility taxes with other states and evaluate how this tax structure treats the various types of Minnesota utilities. The department is working with the MPUC and the MDPS in order to report findings to the legislature by January 15, 1997.

The Minnesota Department of Revenue must present a utility taxation report to the legislature by January 15, 1997.

One widely discussed option is to replace the personal property tax with a tax or other surcharge on the retail sale of electricity in the state. Proponents maintain that this new tax would be competitively neutral; it would treat all entities equally and disregard whether the electricity was generated in or out of the state. Critics respond although certain utility customers would realize some reduced tax burden, other customers, such as those using municipal utilities, would be subject to a new tax. One option being considered would be to include the payments that Munis have made to their municipalities in lieu of property tax into the total amount of tax to be recovered by the retail fee.

An additional concern is that the local governments currently receiving (and relying on) the revenue from personal property tax on utility property would lose this benefit, unless the local government aid distribution is adjusted.

Stranded Costs

Stranded costs are costs incurred by utilities to serve customers in a regulated market that may be unrecoverable in an unregulated environment.

Stranded costs, also referred to as stranded investments, are financial obligations incurred by utilities to serve customers in a regulated market that may be unrecoverable in an unregulated environment. Many of these investments may have been made to fulfill a public interest mandate such as conservation improvement spending.

For example, utilities currently recover their investment in generation facilities (“sunk” costs) through electric rates approved by their regulators and imposed on customers. IOUs have consistently recovered these costs under cost of service regulation, if the MPUC has determined those costs to be prudent investments. If IOU rates continue to be regulated and customers are required to purchase their electricity from the utility, the utility can recover those sunk costs, less any depreciation.

However, if the generation function is deregulated, the utility’s ability to recover these historic costs will be determined by the price set in the market for electricity. If the utility’s investment in the facility exceeds the market price for electricity, the utility will not be able to recover some portion of its sunk costs. That unrecoverable portion is the stranded cost. Either the utility must write this unrecoverable portion off, thereby placing the burden of such stranded costs on its shareholders, or these costs must be passed through to customers.

Stranded investment is not just an issue for IOUs. Co-ops and Munis worry they will incur stranded costs as well, due to losing their largest customers to other entities. They believe this could result in bankruptcies and the destabilization of electric service in rural areas.

Heated discussions on stranded costs concern:

- How great are these costs in Minnesota.
- Who should bear these costs if the generation function is deregulated.

Although national estimates of the total amount of potentially stranded costs exceed \$200 billion, Minnesota’s share should be relatively small compared to other states. There is no definitive estimate of the magnitude of stranded costs in Minnesota. The MDPS states such a calculation depends primarily on three factors: one, the length of the transition period (before deregulation); two, the market price in an unregulated generation market; and three, how aggressively utilities and regulators mitigate the potential amount of stranded costs.

Some argue any discussion of stranded cost recovery should be deferred until utilities demonstrate to the commission that they have legitimate, verifiable and unmitigatable stranded costs. Awarding full stranded cost recovery before deregulating would remove any incentive utilities have for mitigating or minimizing their stranded costs.

Are utilities entitled to recover their stranded costs and, if so, who should pay?
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Another view on stranded cost recovery holds that utilities are not entitled to fully recover these costs. Those who hold this view argue that regulation is not a guarantee of profitability; utilities can and have gone bankrupt. In addition, the rate of return on utility investments has increased over time to reflect the risk of deregulation and has already compensated shareholders for that risk.

Others, like the FERC, contend the utilities are entitled to recover these costs. The investments were made in the context of the “regulatory compact” to ensure reliable and affordable electric service for customers in the utility’s service territory, and with the expected continuation of the current regulatory system. The argument here is that prior to restructuring, the state should commit to full recovery of all prudently made utility investments stranded in the transition to a restructured industry. This commitment would ensure utility cooperation in transforming the industry. Without such cooperation change may come more slowly than desired by pro-deregulation advocates.

Obligation to Serve/Universal Service

Currently, utilities are required by statute to serve all customers in their service territory at just and reasonable rates. In a deregulated industry, suppliers may choose consistently high volume customers to maximize profits. Suppliers may be willing to serve the remaining customers only if they can charge a higher price. It will be important to determine whether and how to develop a structure that will ensure service to all customer classes. One favored option is to allow customers to continue to purchase bundled service from their host utility if they do not choose to shop for the electricity supplier. Another option is to place these customers in a pool and require entities to competitively bid to serve them.

According to some economists, segmenting customers into classes, and serving them separately, could increase overall system costs. The cost advantages for a natural monopolist due to economies of scale, scope and coordination may be minimized or negated. Serving customer classes A and B together, as they have traditionally been, may result in lower overall system costs compared to serving A and B separately.

Integrated Resource Planning

In 1990, the legislature required certain utilities to file a resource plan with the MPUC. This plan is defined as

a set of resource options that a utility could use to meet the service needs of its customers over a forecast period, including an explanation of the supply and demand circumstances under which, and the extent to which, each resource option would be used to meet those service needs. These resource options include using, refurbishing, and constructing utility plant and equipment, buying power generated by other entities, controlling customer loads, and implementing customer energy conservation.

One of the goals of the integrated resource planning (IRP) requirement was to ensure that utilities think about and plan for managing their portfolio of electric supply resources to achieve the least cost portfolio, as well as to increase the reliability of electric supply by increasing the diversity of the supply mix. Of course, utilities have always engaged in resource planning, but the IRP requirement forced utilities to do this planning publicly and to adhere to certain policy goals.

This planning requirement may be incompatible, to some extent, with a more competitive environment. Many resource planners associate a downside with this incompatibility; market

Some argue that the Integrated Resource Planning requirement, as a centralized planning tool, may be incompatible with a deregulated and decentralized electric industry.

participants, in order to compete, will have to rely heavily on the lowest cost generation technologies (currently natural gas combustion turbines) to meet demand for new capacity. This over-reliance, it is argued, may decrease the reliability of electric supply by decreasing its diversity. Critics of IRP dispute the impact

of portfolio diversity on supply reliability, arguing that portfolio diversity is used opportunistically to impose unreasonable environmental constraints on utilities.

A related resource planning issue, separate from resource diversity, is the planning horizon in a competitive environment. The present regulatory structure requires a utility to forecast energy demand ahead 15 years or more and to plan how the utility will meet that demand. This is one aspect of the current regulatory structure that has led to the remarkable reliability of electric service in this country. In a more competitive environment, however, utility planning horizons may shrink to a few years, due to an increased emphasis on a quick return from capital investments, and to uncertainty over the number of future customers.

The Midwest region of the country currently has excess electric generating capacity. As the region grows, so will electricity demand. The current excess capacity is expected to dissipate in five to ten years. Those charged with overseeing the reliability of the system are uncertain about an unregulated market's ability to ensure the necessary supply of electricity. Others believe that the market will develop adequate supply to meet growing demand, if given the appropriate signals.

There is a question of who will be the primary planning entity for IRP purposes. In the restructured industry, should distribution utilities, generators, aggregators, or some government entity be primarily responsible for planning to meet resource needs?

One alternative being discussed is to set up an energy policy forum that would be held at regular intervals to discuss and determine the state's energy policy. The policy forum would include utilities, non-utility generators, power brokers and marketers, environmentalists, regulators, and other interested persons. The IRP process would be transformed from a utility-by-utility process into one in which all distribution utilities would merely report to the MPUC on how the utility plans to comply with an overall state energy policy.

Another alternative would be to streamline the current IRP process to allow utilities greater flexibility. Utilities have complained the present requirement to choose a resource option far in advance of when that additional resource is needed may result in inefficient choices if a more desirable resource option develops later.

Stranded Benefits - Public Purpose Programs

In addition to stranded costs as a result of the transition to a restructured industry, many expect there to be stranded benefits as well. Stranded benefits refer to public purpose programs that may be a burden for suppliers in a competitive market. Such programs include

- Low-income discounts
- Demand-side management and conservation
- Integrated resource and long-range planning
- Economic development
- Research and development of new technologies

Some aspects of many of these programs may be provided competitively in an open retail market. Others will probably not be. Many argue that those functions that may not be provided in a competitive market, but which policymakers think necessary, should be funded with state general revenues, rather than through utility rates. Policymakers will have to determine whether and how to continue such programs in a competitive environment.

Unbundling - Utility Structure and Rates

Structural unbundling is a proposed solution to market power, which many observers believe incumbent utilities may enjoy in a deregulated electric industry. Structural unbundling can take the form of either **corporate** or **functional unbundling**.

■ **Corporate unbundling.** In order to protect customers from the exercise of market power, many argue that vertically integrated utilities should be required to divest themselves of their generation and/or transmission facilities. This could be done by either selling these facilities outright or by creating a new entity and spin those facilities off to the new entity. One issue of corporate unbundling is how this might affect the rights of those who purchased the bonds issued to finance the construction of a

Unbundling can refer either to

➤ **Structural unbundling**, which means the dis-integration of the utility structure

or

➤ **Rate unbundling**, which refers to the allocation of costs associated with the various utility functions such that each of those costs can be separately and accurately stated.

particular facility. When purchasing the bond these people were relying on the stream of revenue generated by the utility to repay the bond. However, if the facility is sold or spun off, the bondholders' expectation of repayment may be affected. In addition, the bonds that were purchased may give the bondholders a claim on all of the vertically integrated utility's assets, a claim that might be impaired by an order to divest generation or transmission assets.

■ **Functional unbundling.** Others believe that concerns over market power can be alleviated by requiring vertically integrated utilities to develop procedures and guidelines to separate the costs and operations of the various services provided. In Order 888, FERC required utilities to functionally unbundle transmission from their generation marketing operations.

Structural unbundling has been the focus of heated discussion in the debate over developing an entity to oversee the transmission system in Wisconsin. Some prefer an Independent System Operator (ISO) in which the transmission-owning utilities in the state continue to own, and to some limited extent, operate their transmission facilities. Others argue that this type of entity may not be sufficiently independent from the transmission-owning utilities. These debate participants argue that a new entity, referred to as a Transco, should be created, and all transmission facilities in the state should be sold to it.

Rate unbundling is a necessary precursor to retail competition. If a retail customer wishes to purchase generation separately from transmission and distribution the cost of that generation must be clearly separated from the other services. Rate unbundling raises **state jurisdiction** problems and **technical issues**.

■ **State jurisdiction.** Rate unbundling is an important issue for state regulators. The FERC states it will assert jurisdiction over the transmission of unbundled electricity for sale at retail, a position state regulators are asking the federal agency reconsider. Currently, FERC has jurisdiction over wholesale electricity transactions, and the transmission of electricity in interstate commerce. State regulators have jurisdiction over retail sales of electricity. Since the costs of generation, transmission and distribution are currently bundled together, state regulators have had jurisdiction over the transmission of electricity for sale at retail. FERC's position may result in the loss of a large portion of state regulators' rate-setting authority.

■ **Technical issues.** Generation facilities play a key role in the transmission of electricity. This fact raises one of the most pernicious technical issues of rate unbundling. In order for electricity to be transmitted, the generating facilities in a region must be operated within very precise parameters, simultaneously balancing load and demand. This simultaneous manipulation of generation is necessary for the reliable operation of the entire electric system, including the transmission system. In fact, some generation facilities are so essential to the reliable operation of the transmission system that they must be operated (so called "must run" facilities) in order for the transmission system to operate reliably and efficiently. Currently it is unclear how the costs for these facilities should be allocated between transmission and generation in an unbundled rate. The answer to such questions can be of vital importance since appropriate service pricing is necessary for a functioning competitive market. It is critical that the cost of generation and transmission be correctly allocated, given the incentive market participants face to shift costs to the regulated service (transmission), thereby reducing the price of the competitive service (generation).

Merchant Plants

Merchant plants are generation facilities that are not intended by the plant owner to be included in the rate base or to serve a defined service territory. The electricity generated by such facilities is meant to be sold in an open and competitive market. Few such plants exist currently, but merchant plants are expected to become a larger part of the utility landscape as the industry structure evolves. Many of the requirements in the current regulatory scheme may be incompatible with such facilities. If merchant plants are an efficient way to provide electricity to the market, these incompatible requirements may have to be modified.

Among these requirements are the requirement of a certificate of need for new large energy facilities, the state siting process for certain generation and transmission facilities, and the utility exercise of eminent domain powers.

■ **Certificate of need.** Currently, a person who proposes to build a new large energy facility in the state is required by statute to obtain a certificate of need (CON) from the MPUC prior to construction. A large energy facility is defined to include

- any electric power generating plant or combination of plants at a single site with a combined capacity of 80,000 kilowatts or more, or any facility of 50,000 kilowatts or more which requires oil, natural gas, or natural gas liquids as a fuel;
- any high voltage transmission line with a capacity of 200 kilovolts or more and with more than 50 miles of its length in Minnesota; or, any high voltage transmission line with a capacity of 300 kilovolts or more with more than 25 miles of its length in Minnesota; and
- any nuclear fuel processing or nuclear waste storage or disposal facility.

Minn. Stat. § 216B.2421, subd. 2.

In order to obtain a certificate of need, an applicant must “show that demand for electricity cannot be met more cost-effectively through energy conservation and load-management measures and unless the applicant has otherwise justified its need.” In other words, the MPUC is required to assess the need for the electricity to be generated by the power, and may not grant a certificate if the applicant can not show that the facility is necessary to meet forecasted statewide electricity demands.

Critics of the certificate of need requirement argue that in a deregulated and competitive market for generation, customers should determine the need for additional generation, not the MPUC. In addition, merchant plants to be built in the state to serve out-of-state electric demand could not meet the current CON requirements.

■ **Facility siting.** Minnesota Statutes, sections 116C.51 to 116C.69 require the Environmental Quality Board to site and/or route large electric power facilities. Although there is some overlap in the definitions, large electric power facilities for the purposes of the Power Plant Siting Act are not the same as large energy facilities for the purposes of the certificate of need statute. Large electric power facilities include:

- high voltage transmission lines, which is defined as a conductor of electric energy and associated facilities designed for and capable of operation at a nominal voltage of 200 kilovolts or more; and
- large electric power generating plants, which are defined to mean electric power generating equipment and associated facilities designed for or capable of operation at a capacity of 50,000 kilowatts or more.

The goal of the power plant siting process is to have the state evaluate and critique alternative routes and sites for the facility, and to determine the best overall route or site. This determination preempts all other local zoning requirements that would otherwise apply to the facility.

Many believe the siting process will still be necessary for siting and routing transmission facilities in a more competitive electricity market, primarily due to

- The large distances a transmission line may need to traverse
- The probability that a single route is clearly the best route for the line
- The fact that transmission will remain a regulated natural monopoly
- The local protest that such a line may engender all along the proposed route

However, these critics of the power plant siting process argue the process may not be as necessary for the siting of generation facilities because such facilities typically raise much smaller land use issues and can be located in a number of places.

■ **Eminent domain.** Currently, utilities in the state (IOUs, Co-ops and Munis) have the authority to exercise eminent domain to acquire property necessary for the provision of electric service. Non-utilities wishing to site a transmission line or build a generation facility do not have this authority. This discrepancy is yet another issue in the debate over the level playing field that many believe necessary for competitors to fairly compete in a deregulated electricity market.

One option being discussed to address this discrepancy is to allow only distribution utilities to exercise this authority on behalf of utility or non-utility projects that are fairly and competitively selected.

Anti-Trust Regulation

Under the current regulatory scheme, utilities may be exempted from the applicability of state and federal anti-trust statutes, either by explicit statutory exemptions or the judicial “state action” doctrine. The state action doctrine can exempt entities subject to comprehensive and active regulation by state or federal regulators from anti-trust prosecution.

As regulatory oversight of electric utilities is relaxed, utilities will be increasingly vulnerable to anti-trust regulation.

For example, each utility in the state with distribution obligations has an exclusive service territory. If the utility industry were deregulated to the same extent as other industries, such an arrangement would likely violate state and federal anti-trust laws, which prohibit such collusive activity and actions to illegally create artificial monopolies. However, the state commission was actively involved in developing exclusive service territories and formally approved their creation, so this activity is exempted from anti-trust prosecution.

As the electric industry is deregulated, and state and federal oversight of utility activity becomes less comprehensive and more passive, the state and federal anti-trust laws are likely to become more important in the regulation of a competitive electricity market.

Pilot Programs

Retail wheeling pilot programs are currently being implemented in a few states, and proposed in several more. Many participants in the restructuring debate are proposing one or more retail pilots in Minnesota. If this is an option that the legislature or other policymakers would like to pursue, the purpose for such programs should be made and kept clear as they are developed. If

In order to ensure that policymakers receive the information they need, the purpose for a retail access pilot program should be clearly established before its development.

the purpose of a retail pilot program is to educate regulators and the electric industry on the efficiency and efficacy of an open and competitive retail electricity market, the pilot program should be designed with this purpose clearly in mind. Legislators could ask several questions in evaluating each pilot program proposal, including whether the pilot program will be able to provide information about, and experience with, the effect of retail competition on

- Retail and wholesale prices for the various customer classes: How sustainable will any expected price decrease be?
- The development of markets for demand-side management services and renewable sources of energy

- The ability of current and new market participants to compete (including an assessment of stranded costs)
- The reliability, security and operation of the transmission and distribution networks
- Customer service and service quality
- Transaction costs for retail customers incurred in participating in an open electricity market
- Market or regulatory barriers for potential competitors

Although pilots may be intuitively attractive to policymakers, there are many participants in the restructuring debate who argue against additional pilot programs. Some argue that due to the inherently limited scope of a pilot program in terms of duration and participation, it is unlikely that it can shed much light on the effects of retail competition on the industry. Others argue that pilot programs in other states have already demonstrated that electricity consumers can benefit from retail competition and that any additional pilot programs would only serve to delay the transition to full retail access.

Cost-Shifting

Cost-shifting is another concern of restructuring—the inappropriate shifting of costs from one class of customers to another. Some consumer advocates argue that deregulating the generation function may result in the shifting of some of the costs of generating electricity from industrial and commercial customers to residential, small business or low-income customers. While most competitors in an open electricity market will vie with one another to serve large electricity customers, there is concern that the so-called “captive customers” (small customers such as residential and small business customers) will not have this large number of choices. As utilities discount their rates to serve large electricity customers, they may attempt to recover more of their costs from captive customers who may not have access to lower competitive rates.

Others contend that the current rate structure may shift costs in the other direction: rates based on something akin to “ability to pay” means large electricity customers pay more than their share

Cost-shifting is to the inappropriate shifting of costs from one class of customers to another, or between customers of a single class.

of utility costs to maintain low rates for captive customers. These people argue that deregulating the generation function will result in exposing and eliminating that subsidy.

Yet another view holds that this static view of a competitive market is incorrect, and that a competitive electricity market is not a zero sum game in which one class of customers has to lose if another class gains. This dynamic view of the market sees all classes of customers benefiting from a competitive electricity market; competition will squeeze sufficient efficiencies from the system to be able to reduce electricity rates across the board.

There is another suggestion that widespread deregulation of generation will level rates across regions. This view holds that the generally low-cost power in the Midwest region will be sold into higher cost regions, such as the Chicago area, lowering that region's average cost, while raising the average cost of electricity in Minnesota and the Dakotas. Others insist this leveling is unlikely, given the transmission constraints between the regions. These commentators also argue that costs are likely to drop for all customers, not increase for some and decrease for others.

Safety and Reliability

There is unanimous acceptance in the restructuring debate that as the generation market is opened to competition, the number, form and complexity of transactions will increase dramatically. Many of those responsible for overseeing the operation of the transmission and distribution networks are concerned that this increase will have a tremendous effect on their ability to maintain safe and reliable networks.

Restructuring the electric industry is primarily about the cost of electric service. The transmission and distribution networks were designed and constructed to ensure reliability in an uncompetitive environment, i.e., to be used by monopoly utilities to serve native load, not to serve multiple competing parties in an open market. Utilities operating the grid cooperated to coordinate power transactions and to maintain a reliable system. Free from competition, utilities were able to cooperate to ensure reliable and safe operation of the electric system, sharing information and resources readily. That cooperation is likely to dissipate in the face of competitive pressures.³

The transmission system was not designed to serve a competitive market. As competition in the industry increases, new tools, processes and facilities will need to be developed to ensure that the grid is not overburdened.

³ Recently the issue was framed this way by a pair of industry commentators:

Operations planners try to achieve five tasks simultaneously: (1) meet anticipated demand at the lowest operating cost; (2) compensate for real and reactive transmission losses; (3) deal with operating constraints; (4) provide real-time balancing generation to meet deviations from expected demand, and (5) provide stand-by generation in case of an outage... At present, operations planning for generation is at each subsystem level, with a single bundled objective—to perform all five tasks at the lowest possible total costs—in order to reach ideal technical efficiency for generation production... While all five tasks are performed today at each subsystem level using all available generation resources, the industry is moving toward performing task 1 in a competitive—not coordinated—manner.

A workable ISO may help to alleviate, but not eliminate, these concerns. Legislators, regulators, utilities and other participants in this process will need to mitigate the impact that restructuring the industry will have on the safety and reliability of the networks.

Environmental Issues

Environmentalists have a number of concerns regarding restructuring the electric industry. Chief among these concerns are the potential lack of support for renewable energy and conservation, and the likelihood that the use of large coal-burning generation facilities will increase as the price of electricity becomes the paramount issue in the industry.

Renewable energy, still in its fledgling stage of development, will likely not be price-competitive with other types of generation in a deregulated market. Therefore environmentalists are

Environmentalists are concerned that retail competition will result in

- a decrease in conservation and renewable energy programs and
- an increase in air pollutant emissions from generation facilities.

concerned utilities will have no incentives to invest in renewable generation technologies. The same holds true for conservation. One policy option favored by environmentalists is to institute a renewable portfolio standard (RPS). Under an RPS, a certain percentage of the energy portfolio of those selling electricity to consumers must be renewable energy. Since this requirement would be placed on all competitors, environmentalists argue that the

RPS is a competitively neutral option to support renewable energy.

Opponents of the RPS raise the concern that this initiative would, in effect, increase the cost of electricity in the state, thus may affect locational decisions by energy-dependent businesses, as well as increase the cost of many goods for which electricity is an input. In addition, RPS critics argue that the market should determine the mix of energy that is sold to consumers, and that if renewable energy is to be supported, government should do so directly. Some RPS critics would prefer either an explicit subsidy (or tax incentive) by government or believe that the market will force utilities to institute green power programs. A green power program would allow customers to purchase renewable energy at market prices. Green power programs can also be instituted in a regulated utility industry, either as a retail choice pilot program for green power, allowing customers to shop for this power, or a customer service program, under which distribution utilities purchase green power at wholesale for their retail customers who want this type of electricity.

Environmentalists also believe that greater competition for generation will increase the use of and reliance on coal-burning generation facilities. These plants will produce power at the least cost (natural gas plants will probably be the cheapest to build and operate, if new capacity is needed, while coal and nuclear plants will be the cheapest plants to operate if already built). Therefore the owners of these plants will have an incentive to increase the amount of power generated at the facility to be sold into the open market. Environmentalists argue that the likely increased air

emissions must be mitigated, either by increased restrictions on emissions or by the internalization of environmental costs caused by the emissions (externalities). Including externalities in the cost of electric power generated by coal plants will increase the cost of coal-generated power and decrease the demand for such power.

Others counter that since each state has an agency charged with protecting the environment, no further environmental restrictions are necessary as long as the coal plants remain below the permitted emission level set by that agency. Many believe externalities are an imperfect means of environmental regulation because estimating costs incurred by air emissions is an extremely imprecise exercise.

In either case, restructuring offers the state an opportunity to examine its environmental policy with regard to the electric industry and to determine the appropriate type and extent of environmental regulation over utility and non-utility activities. Some options the MDPS is considering with regard to this issue include

- Enhancing regulation of point source emissions, by extending the federal Clean Air Act new source performance standards to older generation facilities
- Extending SO₂ emission trading allowances
- Enacting taxes on emissions from non-renewable energy sources
- Examining the possibility of developing regional, multi-state environmental protection compacts

Restructuring Options

The Minnesota Legislature has various options for restructuring the electric industry. This section lists some advantages and disadvantages of five general alternatives.

1. Take No Action
2. Establish Guiding Principles for the State's Energy System
3. Encourage Wholesale Competition
4. Test, Study and Evaluate Limited Retail Competition
5. Authorize Retail Competition (Retail Wheeling)

1. Take No Action

In this case, doing nothing doesn't mean nothing gets done. The FERC has finalized Order 888 and is in the process of implementing this rule. By all accounts, the implementation of this rule will have an enormous impact on the wholesale power market. The U.S. Congress is also expected to take up the restructuring issue in the 105th Congress.

In addition, MAPP has obtained FERC approval to transform itself into a Regional Transmission Group (RTG). RTGs are expected to provide regional transmission system planning, pricing and integration for its members. Ideally, all participants in the Midwest wholesale power market, those needing transmission capacity, as well as those who own or control such capacity, will be members of MAPP's RTG. This will increase access to transmission, thus increasing wholesale competition. MAPP will begin to implement its RTG function in November of 1996. MAPP also has formed a task force to evaluate the possibility of becoming the region's ISO.

In Minnesota, the MPUC is continuing to hold meetings with its Competition Working Group, working through the issues and proposals to increase competition in the electric industry. The MPUC will also be holding public hearings on restructuring throughout the state.

Pros	Cons
<ul style="list-style-type: none">➤ Allows ongoing changes in FERC, and regional policies time to develop and be evaluated➤ Allows the regulatory agencies additional time to plan; maximizes their expertise and experience, while minimizing the legislature's relative lack of experience on these technical issues➤ Over time, the experience of other states may prove some policy options superior to others for Minnesota's needs➤ State policymakers would have an opportunity to review likely federal law changes prior to state level action	<ul style="list-style-type: none">➤ Regulatory agencies may need guidance from the legislature➤ If other states move more quickly than Minnesota and if their efforts are successful, they could draw economic activity away from Minnesota➤ Minnesota businesses that face competition around the country and around the world may be placed at a competitive disadvantage if competitors outside the state can shop for and purchase their electricity at prices lower than regulated prices in Minnesota➤ May limit Minnesota's ability to influence how restructuring occurs in this state, as events in Congress, FERC, MAPP, and neighboring states (as well as within the industry itself) unfold

2. Establish Guiding Principles for the State's Energy System

The legislature might wish to provide a list of principles to guide the agencies and the industry in restructuring the electric energy system in Minnesota. The legislature could establish policies and a framework for restructuring, providing guidance as well as time to plan for regulators, while leaving the details of structure to the agencies. The legislature could then consider the agency recommendations in subsequent sessions.

Pros	Cons
<ul style="list-style-type: none">➤ Allows ongoing changes in FERC, and regional policies time to develop and be evaluated➤ Provides guidance to agencies, as well as an opportunity plan and consider options➤ Maximizes legislative expertise and experience➤ Over time, the experience of other states may prove some policy options superior to others for Minnesota's needs➤ State policymakers would have an opportunity to review likely federal law changes prior to state level action	<ul style="list-style-type: none">➤ Care would have to be taken to ensure that the legislative process does not create a contradictory set of principles not helpful to the agencies➤ Minimizes legislative input into the details of restructuring➤ If other states move more quickly than Minnesota and if their efforts are successful, they could draw economic activity away from Minnesota➤ Minnesota businesses that face competition around the country and around the world may be placed at a competitive disadvantage if competitors outside the state can shop for and purchase their electricity at prices lower than regulated prices in Minnesota➤ May limit Minnesota's ability to influence how restructuring occurs in this state, as events in Congress, FERC, MAPP, and neighboring states (as well as within the industry itself) unfold

3. Encourage Wholesale Competition

This option would encourage further development of a competitive wholesale market in the region: by expanding the use of competitive bidding or other forms of competitive resource acquisition; by implementing information technologies such as electronic bulletin boards; and by utilizing real-time cost and transaction information. These applications would minimize transaction costs for the wholesale power market. In addition, the certificate of need process and integrated resource planning could be modified, streamlined or eliminated. Wholesale market entry barriers from potential competitors could be identified and addressed.

Pros	Cons
<ul style="list-style-type: none">➤ Could maximize benefits of wholesale competition with minimal disruption to current electricity structure➤ Would be consistent with federal and regional initiatives, as well as current state programs such as integrated resource planning and demand-side management➤ Could provide an institutional framework for competition in the electric industry and allow policymakers to better assess the costs and benefits of retail competition➤ Over time, the experience of other states might prove some policy options superior to others for Minnesota's needs➤ State policymakers would have an opportunity to review likely federal law changes prior to state level action	<ul style="list-style-type: none">➤ Would have to work out jurisdictional issues carefully (FERC has exclusive jurisdiction over wholesale power transactions, by and large)➤ Might require increased reporting requirements in the short term➤ If other states move more quickly than Minnesota and if their efforts are successful, they could draw economic activity away from Minnesota➤ Minnesota businesses that face competition around the country and around the world may be placed at a competitive disadvantage if competitors outside the state can shop for and purchase their electricity at prices lower than regulated prices in Minnesota➤ May limit Minnesota's ability to influence how restructuring occurs in this state, as events in Congress, FERC, MAPP, and neighboring states (as well as within the industry itself) unfold

4. Test, Study and Evaluate Limited Retail Competition

Under this option, the legislature could delegate study of the restructuring issue to the MPUC, the MDPS or to a group of legislators who could meet over the interim, allowing more time than a legislative session does. The group of legislators could either be from the Legislative Electric Energy Task Force, some new entity created specifically to analyze restructuring issues, or from joint House and Senate policy committees. The legislation or resolution directing this group could specify those issues or policies that the legislature finds of paramount importance.

The legislature could also authorize the MPUC to develop and order one or more retail access pilot programs or other restructuring pilots so that regulators, industry participants, customers, legislators and consumer advocates could gain first-hand experience with and knowledge about retail competition in the electric industry. The goals of such pilot programs should be carefully constructed and explicitly stated.

Pros	Cons
<ul style="list-style-type: none">➤ Would allow legislators adequate time and opportunity to examine and evaluate restructuring issues and proposals➤ Could provide actual experience with the complexities of retail competition➤ Over time, the experience of other states might prove some policy options superior to others for Minnesota's needs➤ State policymakers would have an opportunity to review likely federal law changes prior to state level action	<ul style="list-style-type: none">➤ If other states move more quickly than Minnesota and if their efforts are successful, they could draw economic activity away from Minnesota➤ Minnesota businesses that face competition around the country and around the world may be placed at a competitive disadvantage if competitors outside the state can shop for and purchase their electricity at prices lower than regulated prices in Minnesota➤ May limit Minnesota's ability to influence how restructuring occurs in this state, as events in Congress, FERC, MAPP, and neighboring states (as well as within the industry itself) unfold➤ May not tell policymakers much about the effects of retail competition on the industry, either due to the limited scope of pilots or because a new pilot program may not add much to the existing information regarding retail access

5. Authorize Retail Competition (Retail Wheeling)

This alternative would allow at least some customers to choose their electricity vendor instead of having to purchase power from the utility in their area. The native utility could continue to serve those customers who do not want to change. Customers who choose to leave the current utility system could shop around for power that meets their needs in terms of price and reliability. The options for customer choice could be to

- Implement all at once
- Phase in to allow choice to various classes of customers
- Phase in to allow choice to all retail customers in various areas or
- Phase in to allow choice only in utility service territories with a certain number of customers

This last option would allow competition in those territories where the host utility, due to its size, is most likely ready to compete while still protecting smaller, mostly rural utilities.

Pros	Cons
<ul style="list-style-type: none">➤ May maximize customer choice and minimize rates if a competitive market structure develops➤ Increased rivalry for customers could reduce overall electricity prices.➤ Could spur innovation in technology and energy services➤ Could generate significant economic activity and economic development in the state	<ul style="list-style-type: none">➤ If a competitive market structure does not develop, decreased regulation could increase overall electricity costs and prices or result in cost-shifting among customers.➤ The stranded cost issue would have to be dealt with.➤ Public purpose programs may have to be provided by other means, or discontinued.➤ Could cause problems with regard to reliability, power quality, and transmission system integrity➤ Issues regarding a competitively neutral playing field, such as utility taxation, would have to be resolved.

Chapter 2

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The Structure of the Minnesota Electric Industry

Traditionally, an electricity customer must purchase all of its electric services from the utility serving that customer's service territory, including the three primary services—generation, transmission, and distribution.

Generation refers to the actual creation of electricity, which can be generated using a number of methods and fuels such as nuclear, coal, hydro or wind. In Minnesota a number of entities generate electricity, including investor-owned utilities (IOUs), rural electric generation and transmission cooperatives (G & T Co-ops), municipal electric utilities (Munis), and municipal power agencies (MPAs), which are formed to serve groups of Munis. Large scale wholesale generators owned by the federal government (called federal power marketing agencies or PMAs) that produce power for resale are another source of electricity. Wholesale generators known as non-utility generators (NUGs) or independent power producers (IPPs) have also become important players in the generation of electricity in Minnesota, and elsewhere. Finally, some entities, mostly large industrial companies, have constructed generation facilities to generate some portion of their own electricity needs ("self-generation").

Transmission refers to the delivery of electricity over perhaps long distances at high voltage from a generation facility through a transmission network usually to one or more distribution substations, where the electricity is "stepped down" (the voltage is reduced) for distribution to residential, commercial and industrial customers. Transmission systems owned by individual utilities are interconnected to form a transmission grid, which allows for greater system reliability as well as electricity sales between utilities. Generation and transmission may be either wholesale or retail functions, depending on the particular transaction. For the retail customer, the costs for these functions are bundled into retail rates, along with the costs of distribution.

Distribution involves the retail sale of electricity directly to consumers. In Minnesota three types of electric utilities provide distribution of electricity—IOUs, distribution Co-ops, and Munis—within exclusive service territories assigned to each utility by the Minnesota Public Utilities Commission (MPUC).

Other important functions traditionally provided by vertically integrated utilities include customer service, billing, meter reading, demand-side management, research and development, as well as aggregation and ancillary services. Aggregation refers to the development and management of both

- A power portfolio, combining power from a variety of sources in order to match the demand for power with adequate power supply; and
- A portfolio of customers with combined demands in order to economically serve these customers.

Ancillary services are those services necessary to effect a transfer of electricity between a seller and a buyer and to coordinate generation, transmission and distribution functions to maintain power quality and system stability.

Under the current industry structure, the utility serving a service territory (the “native” or “host” utility) provides all of these services and functions, selling them as a single “bundle.” These service costs are recovered from customers through charges for energy, capacity and customer costs rather than through charges for generation, transmission, distribution and ancillary services.

The restructuring debate centers on whether or how the generation function should be separated from the “bundle,” allowing retail customers to choose their electricity supplier. It is widely accepted that distribution and transmission will remain regulated functions.

The Utilities

The five IOUs in Minnesota are vertically integrated utilities, in that the IOUs generate, transmit, and distribute their own electricity.⁴ The 45 Co-ops generate a small amount of the power they distribute but mostly purchase their power from the seven G&T cooperatives serving Minnesota. The 126 Munis in the state also generate a small amount of the power they distribute to their customers but, for the most part, purchase the bulk of that power at wholesale from the eight MPAs serving the state, or from IOUs, G&T Co-ops or elsewhere.⁵ IOUs account for about 70 percent of retail electricity sales in Minnesota with Co-ops and Munis roughly splitting the remaining percentage of sales.

IOUs are subject to rate regulation by the MPUC whereas Munis and most Co-ops are not. The municipal government oversees Muni rates. Co-ops are held accountable by their members for the rates they charge but may elect to be rate regulated by the MPUC. Only one Co-op is currently rate regulated by the MPUC (Dakota Electric Cooperative).

⁴ In addition, IOUs purchase power from and sell power to other entities at wholesale.

⁵ Although not vertically integrated like the IOUs, Co-ops and Munis can be said to be contractually integrated with their wholesale suppliers in that Co-ops and Munis have traditionally entered into long-term “all requirements” contracts with their wholesale suppliers, either MPAs, G&T Co-ops or IOUs. Just as the vertical structure of IOUs may be dis-integrated as the industry is restructured, the traditional contractual relationship between Co-ops/Munis and their wholesale suppliers may also be dis-integrating, as Co-ops and Munis allow these long-term all requirements contracts to expire.

A Comparison of Utility Characteristics				
Type of Utility	Type of Oversight	Vertically Integrated?	For Profit or Non-Profit	Number Serving Minnesota
IOU	MPUC	Yes	For Profit	5
Muni	Municipal Government	No	Non-profit	126
MPA	Board of Muni Members	Partially (generation and transmission, not distribution)	Non-profit	8
Distribution Co-op	Board of Co-op Members	No	Non-profit	45
G&T Co-op	Board of Distribution Co-op Members	Partially (generation and transmission, not distribution)	Non-profit	7

The Regulators

Utilities are regulated at various levels of government by various entities. The Federal Energy Regulatory Commission (FERC) regulates the rates, terms and conditions of the wholesale electricity sales (sales of electricity for resale to retail customers), and the transmission of electricity in interstate commerce. State PUCs, as well as municipalities and Co-op boards, are responsible for regulating retail sales of electricity. As noted above, Munis are regulated by local municipal governments, and Co-ops are overseen by boards comprised of their members. The MPUC, with the assistance of the Minnesota Department of Public Service (MDPS) comprehensively regulates the activities of IOUs as well as certain aspects of Co-op and Muni operations.⁶

In Minnesota, two administrative agencies have responsibilities for regulating public utilities: the MPUC and the MDPS. In addition, state law requires the Office of the Minnesota Attorney General (AG) to also play a role in regulatory proceedings.

⁶ Aspects of the industry that are comprehensively regulated by state agencies include the rate a utility may charge for its services, to whom it may provide those services, the amount the utility must invest in infrastructure, the timing of those investments, the amount the utility must invest in conservation, the capital structure of the utility, and the process by which customers are billed, etc.

The MPUC consists of five commissioners, appointed for six-year terms by the governor with the advice and consent of the state Senate. The commission's duties are both "quasi-judicial" and "legislative." The commission's "quasi-judicial" functions are

the promulgation of all orders and directives of particular applicability governing the conduct of the regulated persons or businesses, together with procedures inherently judicial.

Minn. Stat. § 216A.02, subd. 4

Thus, the MPUC is an adjudicative or judicial body, and makes decisions with regard to particular utilities in particular situations.

In addition to the MPUC's quasi-judicial function, chapter 216A defines the MPUC's legislative function as

the establishment and promulgation of all rules, orders, and directives of general or particular applicability, governing the conduct of the regulated persons or businesses, together with such investigative procedures as are incident thereto and all other valid acts and procedures which are historically or functionally legislative in character.

Minn. Stat. § 216A.02, subd. 2

Accordingly, the commission may establish rules, regulations and guidelines that govern all regulated utilities.

The MDPS is headed by a commissioner appointed by the governor for a term not longer than the governor's term of office. The role of the department is an "administrative function." As defined in Chapter 216A, the administrative function means

all duties and procedures concerning the execution and enforcement of the laws, rules, orders, directives, duties, and obligations imposed for the control and government of the persons or businesses regulated, together with investigative activities incident thereto and procedures inherently administrative or executive in character.

Minn. Stat. § 216A.02, subd. 3

The department, then, is charged with executing and enforcing the obligations imposed—either by the legislature or the MPUC—on utilities. The MDPS is also statutorily a party in all MPUC proceedings; it advocates for the general public interest, and approves utility conservation programs. The MDPS is the lead executive branch agency on energy policy although both the MPUC and the MDPS advise the legislature. The department also investigates the conduct and practices of regulated utilities.

The AG provides both the MPUC and the MDPS with legal counsel and represents those agencies in the discharge of their respective duties. In addition, a division of the AG—the Residential and Small Business Utility Division (RUD)—is authorized by statute to intervene in MPUC proceedings, to advocate for the interests of residential and small business utility customers.

Other state and local agencies have regulatory responsibilities over utilities as well. For example, the Minnesota Environmental Quality Board oversees the siting of large power plants and power lines, and the Minnesota Pollution Control Agency regulates the air emissions from power plants as well as other environmental impacts associated with such plants.

Utilities also do much to regulate their own behavior. One example is the North American Electricity Reliability Council (NERC), a voluntary not-for-profit association of utilities and other industry participants that promotes the reliability of electricity supply on this continent. NERC consists of nine regional reliability councils. Minnesota utilities belong to the Mid-Continent Area Power Pool (MAPP) reliability council.

Minnesota's Electricity Rates

Minnesotans, like other Midwest residents, currently benefit from fairly low rates compared to other regions of the country. This is due to: the economy power exchanges⁷ that take place between MAPP members; the low cost coal-burning power plants in Minnesota and North Dakota that serve Minnesota load; the low cost nuclear power generated in the state; the low cost hydropower produced in Minnesota or imported from Canada; and the efficiency and effectiveness of Minnesota's utilities and regulators.

⁷ MAPP is a power pool in addition to being a regional reliability council. As members of a loose power pool, MAPP members post the amount of power each would be willing to sell to others in the pool, and the wholesale price for that power. If power is available at a price below what the cost to a member utility would be if the utility generated the power for themselves, the utility is likely to buy that power instead of generating their own. Such a power sale is termed an "economy exchange."

Average Retail Rates by NERC Region		
NERC Region	Cents per Kilowatt Hour (February 1996)	Percent Change 1995 to 1996
Mid-Continent Area Power Pool (Western Midwest - includes Minnesota)	5.19	-2.47
Electric Reliability Council of Texas (Texas)	5.48	-7.78
Southern Power Pool	5.60	+1.46
East Central Area Reliability Coordination Agreement	5.79	+1.23
Southeastern Electric Reliability Council (Southeast Region)	6.10	-0.16
Mid-America Interconnected Network (Eastern Midwest - includes Illinois)	6.34	+2.43
Western Systems Coordinating Council (Western U.S. - includes California)	7.02	-2.77
Mid Atlantic Area Council (Mid-Atlantic Region)	8.19	+0.25
Northeast Power Coordinating Council (Northeast Region)	10.7	+2.41

Source: Public Utilities Fortnightly/POWERdat Database, July 16, 1996.

The table shows retail rates in the Mid-Continent Area Power Pool are the lowest in the country and decreasing.

The areas of the country with the highest retail rates include, not coincidentally, the majority of those states conducting the most heated debates on restructuring issues—New Hampshire, California, New York, Pennsylvania, and Massachusetts.

The table does not tell the whole story. As expressed by many deregulation advocates, when a business person sees that a competitor may be getting electric services at a much lower rate, low regional electricity costs are small comfort to that business person. In other words, despite relatively low electricity rates, Minnesotans could perhaps pay even less.

The Regulatory Compact

In 1974 the legislature created the outlines of the current regulatory structure in Minnesota.⁸ Utilities were granted exclusive service territories and were given a monopoly on the provision of electricity within those territories. No electricity may be sold to customers within a utility's territory other than by that utility, except in certain limited circumstances. (Minn. Stat. § 216B.40)

In exchange for this monopoly each utility assumed the obligation to serve all customers within its service territory and to provide quality service at just and reasonable rates. The utility is permitted to recover reasonable and prudent expenses associated with its provision of service plus a reasonable return on its investments made to serve customers. Some consider this to be a "regulatory compact." The underlying rationale for this compact has both a legal and an economic component.

Legal Authority for Public Utilities Regulation

There is a long history in this country of subjecting private businesses to public control. Initially the U.S. Supreme Court attempted to define a list of businesses "affected with the public interest," thus subject to regulation. As spelled out by the U.S. Supreme Court in 1877:

When, therefore, one devotes his property to a use in which the public has an interest, he, in effect, grants to the public an interest in that use, and must submit to be controlled by the public for the common good, to the extent of the interest he has thus created. *Munn v. Illinois*, 94 U.S. 113, 126 (1877).

Thus, the Court in *Munn* recognized a legislative policy that has been implemented at both the state and federal levels—that certain goods are so vital to the well-being of citizens that there must be some government intervention to ensure their safe, adequate and nondiscriminatory delivery.

However, in 1934 the Court abandoned the tedious task of delineating businesses "affected with the public interest," in favor of a more general and practical test. In that year, the U.S. Supreme Court held that regulation of any business is constitutionally acceptable if the regulation is based on laws that bear a reasonable relation to a proper legislative purpose, is not arbitrary or discriminatory, and does not violate the requirements of due process. *Nebbia v. New York*, 291 U.S. 502 (1934).

⁸ Prior to 1974 Minnesota utilities were regulated by federal agencies, as well as by the municipalities the utilities served pursuant to franchise agreements. Franchise agreements are still an important component in the Minnesota electric industry today.

Thus, a review of the legal history of regulation reveals only that the government, under the *Nebbia* test, has the authority to regulate businesses. Such a review does not provide a guide as to which businesses government should regulate. Economic theory provides one such guide.

Economic Rationale for Public Utilities Regulation

The provision of electric service has traditionally been considered to exhibit the characteristics of a "natural monopoly." According to economic theory a natural monopoly exists in a market if one service provider in the market can serve customers more efficiently than many competing service providers. A common explanation for electricity provision as a natural monopoly is that allowing competitors to string duplicative transmission and distribution wires and construct excess generation capacity would waste resources and increase electric rates for customers. (Minn. Stat. § 216B.01)

The provision of electric service has traditionally been considered a "**natural monopoly**," meaning that one service provider in the market can serve customers more efficiently than many competing service providers.

Generally, the characteristics of a natural monopoly may include⁹

- A high up-front capital investment in technology
- Limited storability of the provided service or goods
- Limited transportability, requiring operations near the end users (generally requiring a transmission network)
- Cost advantages of large and integrated systems as a result of better utilization of existing capacity (economies of coordination and density), or economies of scale and scope

⁹ This list of the characteristics of a natural monopoly comes generally from materials prepared and presented by Johannes M. Bauer at the Annual Regulatory Studies Program at Michigan State University, July 31 to August 4, 1995.

In markets exhibiting the characteristics of a natural monopoly, government intervention in the form of regulation over a single firm is considered necessary to provide the market discipline that competition cannot provide.

Economies of scale result when the per unit cost of production decreases as more units are produced, thus providing a cost advantage to suppliers who can produce more.

Economies of scope refer to technologies that allow a single firm to jointly produce multiple services less expensively than multiple firms producing those services separately.

Thus, regulation is meant to mimic, to a large extent, the effect of competition on the firm's behavior, and to replace competition when competition is neither practical or reasonable. In the absence of regulation, the monopoly firm will be able to exert market power and price its output high above its costs. In addition, the firm may not utilize its resources in the most efficient manner and may have limited incentives to improve its productivity through innovation. Another rationale for regulation is that if the monopoly is not

protected through regulation, other firms may attempt to enter the market, resulting in wasteful duplication of facilities.

Many argue that retail customers should not have to purchase generation services in a bundle with other electric services from their native utility.

The bundling of generation with transmission, distribution, aggregation and ancillary services has been considered a natural monopoly, i.e., that a single utility can serve all of the needs of their customers more efficiently than many competing electricity providers.

In the past, generation plants exhibited significant economies of scale, one of the fundamental characteristics of a natural monopoly. These economies were derived from the fact that larger power plants generated electricity at a lower cost than smaller plants. However, due to recent new technologies, this is no longer uniformly true. Smaller and more efficient generation facilities are being built to provide power at a similar cost as the much larger plants of twenty years ago. In addition, non-utility generation suppliers, spurred by both federal and state laws, now compete to a limited extent with utilities to supply electricity.

Since generation no longer exhibits significant economies of scale and some competition exists with regard to generation, many argue that the generation function should no longer be regulated and should be separated or "unbundled" from the other components of the utility industry. This would allow retail customers to shop for the lowest cost power, which proponents maintain would reduce costs to consumers.

This argument is not universally accepted. Some counter that a single utility providing bundled service can be the most efficient and economic way to provide electric service to retail customers. These observers believe that the single utility may be unique in achieving the economies and efficiencies of balancing and coordinating the electricity demand within its service territory with an adequate electricity supply for its customers. These observers contend that deregulating the generation function could raise overall system costs and average retail rates by

- Increasing the cost of coordinating power supplies and transfers
- Increasing transaction costs between market participants
- Increasing the costs of maintaining system reliability and security

However, there is agreement that competition for generation in the wholesale market generally reduces overall system costs by utilizing competition to introduce additional efficiencies into the electric industry while retaining the efficiencies and economies of the current structure. Most opponents of retail access want additional measures that encourage increased wholesale competition to be implemented and allowed to affect the market before retail competition is introduced into the industry.

It is generally accepted that distribution and transmission should remain natural monopolies, and will continue to be provided by the native utility. However, the extent and nature of the regulation of these functions may also change dramatically as the industry is restructured. With Order 888, the FERC is attempting to comprehensively re-regulate the transmission network. The order requires transmission facilities rates for competitors to be comparable to the prices the owners charge themselves. The FERC has also asserted rate-setting authority over unbundled retail transmission services, which are currently under state jurisdiction.

In addition, distribution facilities will remain regulated by state regulators. However, a major issue being discussed is whether a more flexible method, such as performance-based regulation (PBR), should replace traditional cost-of-service rate regulation as the primary oversight tool of state regulators.

Chapter 3

The Regulatory Context for Competition in the Electric Industry

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Defining Competition

Competition refers both to a process and a market structure.

Competition as a process involves rivalry among firms for customers. Usually this rivalry involves providing better service, different services, or a better price. Competition as a market structure requires a number of comparable suppliers in the market as well as a sufficient number of comparable customers.

By "comparable" economists mean that several suppliers of generally equal size and market share participate in the market to serve several customers of equivalent demand characteristics. Otherwise, a dominant supplier (or group of suppliers) can exert market power over the market, meaning the dominant actor could raise prices without experiencing a decrease in revenues. A dominant customer can also have an adverse influence on the market. As a result the overall benefits of competition may not be realized. These benefits include

- Lower prices (or in technical terms, output prices approximating the marginal aggregate costs of inputs)
- More efficient allocation of resources
- Increased innovation and differentiation of services
- Better quality products or services

The distinction between the two uses of the term "competition" is important. Creating or developing a competitive market structure may be more important than merely allowing competitors to compete.¹⁰ A market in which ten suppliers compete, but which has a dominant supplier with 75 percent of the market, may not be a competitive market, even though the multitude of suppliers contend with one another for customers. Likewise, a market with two or three comparable suppliers, each with equal market shares, may also not be a competitive market.

¹⁰ Some economists have argued that actual competition among market participants is not necessary in order to achieve some of the benefits of competition. These economists contend that the benefits of competition can be derived from the ability of potential market participants to enter the relevant market and compete, should the current firms in the market attempt to increase prices. This theory, the contestability theory, is predicated on the expectation that current market participants will constrain their behavior and keep prices down in order to keep potential entrants out of the market, thus exacting certain of the benefits of competition, without actual competition. Other economists respond that this theory is not useful in actual practice because market barriers will restrain the potential entrants from entering the market, thus allowing current market participants to extract monopoly or oligopoly prices from customers. See Shepherd, William G. "Contestability vs. Competition-Once More," **Land Economics**, volume 71, number 3, August 1995, p. 299+.

Increased competition in the electric industry could occur at either the wholesale or retail level of the market, or both.

The Wholesale Level

Competition at the wholesale level (sales for resale to retail customers) exists under the current regulatory structure. Utilities may purchase power from wholesale electricity generators, who may or may not be other utilities, for distribution to retail customers. Competition at this level will be further enhanced by open access to transmission facilities and by state progress toward implementing competitive bidding for new power needs. As access is increased, wholesale competition will become more intense. Some commentators suggest that opportunities for competition at this level could be encouraged without unnecessarily disrupting the current regulatory and industry structure; the benefits of competition would be realized with minimal disturbance to the current industry structure.

The Retail Level

Competition at the retail level must allow customers the choice of their electricity supplier, instead of having to purchase electricity from the customer's host utility. "Retail wheeling" or "direct access" requires a fundamental shift in the way legislators, regulators, providers and customers view the electric industry. Concepts basic to the electric industry, such as the provision of universal service and the maintenance of exclusive service territories, may have to be re-assessed in such an environment. As a result, changes in Minnesota's legal and regulatory regime are necessary to implement retail competition. Proponents of retail competition argue that its benefits cannot be fully realized unless full retail competition is available.

Currently, comprehensive competition at the retail market level does not exist in Minnesota or elsewhere. Approximately 39 states are exploring the costs and benefits of retail competition, either at the regulatory or legislative level (or both). Significant action has taken place in only a few. Four states, California, Rhode Island, New Hampshire and Pennsylvania have passed legislation that allows competition at the retail level. Several states, including Wisconsin, are finalizing restructuring plans although legislative changes will most likely be necessary before implementation. In addition, some states are developing pilot programs for retail access, and a few, such as New Hampshire, Massachusetts and Illinois, are currently implementing such programs. On the other hand, a few states, (most recently Idaho), have decided that it is not in their best interest to implement retail competition at this time. On the federal level the 105th Congress will likely take up legislation dealing with these issues.

Federal Actions to Promote Competition

Since 1978 both the federal government and the state of Minnesota have taken steps to encourage wholesale competition in the electric industry, responding to and creating forces for change. At the federal level, both Congress and the FERC have taken noteworthy steps.

Congressional Actions

In recent years the two most important congressional actions to promote competition in the electric industry were passage of

- The Public Utilities Regulatory Policies Act of 1978
- The Energy Policies Act of 1992

Public Utilities Regulatory Policies Act of 1978

Prior to the passage of the Public Utility Regulatory Policies Act of 1978 (PURPA), the U.S. Supreme Court held that the Federal Power Act did not authorize the Federal Power Commission, the administrative precursor to the FERC, to order wholesale wheeling, i.e. access to transmit one's power through the transmission facilities of another for sale to a third party at wholesale. *Otter Tail Power Co. v. United States*, 410 U.S. 366, 375-76 (1973).

In 1978 Congress passed PURPA, which, among other things, attempted to address competition in the wholesale electricity market by adding a new section, section 211, to the Federal Power Act, and by stimulating the establishment of a certain class of non-utility generators called "qualifying facilities" (QFs). An upsurge in the number of other non-utility generators, also known as independent power producers (IPPs), closely followed the proliferation of QFs in the wholesale market.

Section 211. Section 211 purportedly gave the FERC limited authority to order wholesale wheeling. However, the FERC later determined that this authority was too limited to have any effect; only one order was ever issued under this section.

Qualifying Facilities. On the other hand, the establishment of QFs had a substantial effect on wholesale competition. To qualify for this regulatory status, a non-utility generator has to either be a cogeneration facility, or a small power producer using specified energy sources such as biomass, geothermal, solar or wind.

Once a facility acquires QF status, PURPA provides the QF with a guaranteed market for its power by requiring the utility in whose territory the QF is located to purchase the power produced by the QF at no more than the utility's "avoided cost," i.e., the incremental cost to the utility to purchase or produce the same amount of electricity. QFs are also exempt from the FERC rate regulation; the rates and terms of QF contracts with their host utility are approved by the state regulatory commission.

In addition to the guaranteed market for their power, QFs are also exempt from the restrictions of the Public Utility Holding Corporation Act of 1935 (PUHCA). PUHCA requires a holding company (defined as a company that "directly or indirectly owns, controls, or holds with a power to vote, ten percent or more of the outstanding voting securities of a public utility) to limit its holdings to only those entities that are

consistent with the operation of an integrated public utility system and reasonably incidental, or economically necessary or appropriate, to the operation of an integrated public utility system. 15 United States Code 79K.

Additionally, entities that are subject to PUHCA must register with the Securities and Exchange Commission and submit to that commission's oversight in a number of areas.

Independent Power Producers. Some IPPs (as well as wholesale power producers affiliated with a utility—APPs or affiliated power producers), have managed to prosper since the enactment of PURPA. Many entities found the size and type of energy requirements for QF status too restrictive and decided to forego the guaranteed market of QFs to test the wholesale market for non-QF power.

In the 1970s and early 1980s, electric utilities, anticipating a growth in demand for electricity, built large generation facilities (many of them nuclear). The need for the generation capacity of these facilities turned out to be lower than expected, while the cost of building many of these plants increased dramatically. Some of these capital investments were determined by state PUCs to be imprudent investments which then had to be written off (borne by utility shareholders rather than passed through to customers). Large-scale write-offs endangered the solvency of many utilities and made utility managers industry-wide leery of making such capital investments in the future.

As a result of these write-offs, electric utilities that once viewed IPPs as unwanted interlopers now saw them as an opportunity to share the risk of increasing generation capacity. Instead of building expensive facilities, subject to imprudence determinations by state regulators, the electric utilities could purchase power from IPPs. And, unlike the case with QFs, the electric utility could purchase this power at negotiated rates.

Obstacles to Expanding Competition

The growth in the number of QFs, IPPs and APPs, as well as the establishment of competitive bidding for generation contracts, helped to erode the effective monopoly the electric utilities possessed with regard to generation, and provided additional impetus for competition throughout the industry.

However, a number of obstacles remained in the way of further expanding competition at the wholesale level. One of these obstacles was PUHCA. Although QF status garnered an exemption from the requirements of PUHCA, other IPPs expended scarce resources to form intricate organizational structures to avoid PUHCA's regulatory burden. These structures are sometimes referred to as "PUHCA pretzels," with their confusing institutional arrangements created to avoid triggering the statute. In addition to using up scarce resources, PUHCA pretzels also made it more difficult for project proposals to receive financing. Lenders did not look with favor on the "fragmented ownership and separation of ownership from operation control" characteristic of these organizational structures.¹¹

Another obstacle to increased wholesale competition was the lack of transmission access that IPPs faced when attempting to market their power outside of the service area of their local utility. As noted above, although PURPA professed to give the FERC the authority to order such access, this authority was too restricted to be useful.

Energy Policy Act of 1992

In 1992 Congress passed the Energy Policy Act (EPAct). EPAct addressed the two obstacles referred to above by exempting PUHCA requirements for certain wholesale generators, and by amending section 211.

Exempt Wholesale Generators. EPAct exempted another class (other than QFs) of IPPs from PUHCA. Called exempt wholesale generators (EWGs), an IPP that is engaged exclusively in the business of owning or operating a facility used to generate electric energy exclusively for sale at wholesale is exempt from the requirements of PUHCA and the QF PURPA limitations. 15 U.S.C. § 79z-5a. Since an EWG is not an electric utility company as defined by PUHCA, no part of that statute applies to EWGs. EWGs are, however, public utilities for the purposes of the Federal Power Act, and are therefore subject to "regulation of rates and charges for sales of electricity or leased capacity, tariff requirements, and information reporting."¹²

¹¹ Watkiss, Jeffrey D. and Smith, Douglas W. "The Energy Policy Act of 1992 - A Watershed for Competition in the Wholesale Power Market," *Yale Journal on Regulation*, Summer 1992, p. 449, 465.

¹² Watkiss and Smith at 467.

Amended Section 211. EPAct also amended section 211 to allow the FERC substantially more authority to order wholesale transmission access. Section 211, as amended by EPAct, authorizes any entity generating electric energy for sale at wholesale to petition the FERC to order a transmitting utility to provide wheeling services. A transmitting utility is defined as

any electric utility, qualifying cogeneration facility, qualifying small power production facility, or Federal power marketing agency which owns or operates electric transmission facilities which are used for the sale of electric energy at wholesale. 16 U.S.C. § 796(23).

The FERC is authorized to order such services, including the siting and construction (enlargement) of transmission capacity necessary to provide the services requested by the petitioner.

Under EPAct, the FERC is only authorized to order transmission access for those who petition the commission. EPAct does not expressly authorize the FERC to order general transmission access. In addition, the FERC is expressly prohibited from requiring "the transmission of electric energy directly to an ultimate consumer," i.e., retail wheeling. 16 U.S.C. § 824k(h).

FERC Actions

The FERC has taken a number of actions to encourage competition in the wholesale market. These actions include

- Authorizing market-based rates
- Issuing section 211 wheeling orders
- Ordering open access transmission tariffs
- Issuing the Open Access Transmission Rule (Order 888)

Market-Based Rates

Market-based rates are those set by willing buyers and sellers of power. This method may be used instead of the more traditional method of rate setting, by regulators pursuant to administrative proceedings, with rates based on the costs of producing the power. Market-based rates, unlike cost-based rates, allow the seller of power to retain the difference between the seller's cost of producing the power and the price the buyer is willing to pay. Market-based rates foster the development of competitive bulk markets by allowing electricity generators to respond quickly to market opportunities.

The FERC approves the use of market-based rates on a case-by-case basis. The FERC has authorized market-based rates only where the commission determines

that the seller—electric utilities as well as non-utility generators—either lacked power to influence price in the relevant market or had mitigated that power in some fashion.¹³

Thus, the FERC's primary concern when considering each application for market-based rates has been the power generator's ability to limit access to transmission facilities, and then, exert market power over that aspect of the power market. The ownership or control of transmission facilities, according to the FERC, is "the most likely route to market power in today's electric utility industry . . ." *Citizens Power & Light Corp.*, 48 FERC ¶ 61,210 at 61,777 (1989). Thus, initially, the FERC favored authorizing market-based rates only for IPPs. The FERC later extended the use of such rates to utilities, provided the utility adequately mitigated any market power enjoyed by the utility.

Section 211 Wheeling Orders

As noted previously, EPAct authorized the FERC to issue section 211 orders, upon application, to require a transmitting utility to allow the use of the utility's transmission facilities by a competitor. The FERC has utilized this option as one tool to encourage competition in the bulk power market. However, the effectiveness of such orders to encourage competition in the wholesale power market is reduced because section 211 orders are only applicable between the utility and the competitor applying for access. Also, the process for approving such an application takes time.

So the FERC has found that section 211 orders alone are not adequate to sufficiently open up the bulk power market to competition. The FERC has determined that "open access transmission tariffs" are preferable because such tariffs have general applicability and result in more efficient and immediate access than section 211 orders. Therefore, the FERC imposed the filing of such tariffs as a condition before authorizing market-based rates, or approving a merger, consolidating or purchasing public utilities in those cases where the FERC determined that open access to transmission facilities was necessary to mitigate market power.

Open Access Transmission Tariffs

Once open access transmission tariffs have been filed with the FERC, others may use the transmission facilities controlled by the power supplier to transmit their power at the rates listed in the filed tariff. This opens those facilities to competitors and eases the transmission barrier power generators face.

¹³ Watkiss and Smith at 487-88.

In the past, open access transmission tariffs have allowed only point to point service. This involves "designated points of entry into and exit from the transmitting utility's system, with a designated amount of transfer capability at each point." *El Paso Elect. Co. v. Southwestern Pub. Serv. Co.*, 68 FERC ¶ 61,182 at 61,926 n. 9 (1994).

However, in 1994 the FERC held that in many cases point to point service alone was unduly discriminatory and anticompetitive. *American Elect. Power Serv. Corp.*, 67 FERC ¶ 61,317. Following that decision the FERC required such open access transmission tariffs to adhere to what the FERC terms a comparability standard. This standard states that

[A]n open access tariff that is not unduly discriminatory or anticompetitive should offer third parties access on the same or comparable basis, and under the same or comparable terms and conditions, as the transmission provider's uses of the system. AEP, 67 FERC ¶ 61,317 at 61,490.

Thus, when the FERC was presented with an opportunity to mitigate market power (that is, to encourage competition), the FERC required the utility holding market power to file an open access transmission tariff that allows competitors to use the utility's transmission facilities under terms and conditions comparable to the utility's use of those facilities. Often, the comparability standard requires network service instead of point to point service. Network service is more similar to the access that the controller or the owner of the transmission facilities enjoys therefore it does more than point to point to mitigate market power and encourage competition.

The Open Access Transmission Rule - Order 888

On March 29, 1995 the FERC issued a controversial Notice of Proposed Rulemaking entitled

Promoting Wholesale Competition Through Open Access Non-discriminatory
Transmission Services by Public Utilities

Called the Mega-NOPR by some, this notice of proposed rulemaking indicated the FERC's intent to require all electric utilities to file non-discriminatory open access transmission tariffs with the commission. The Mega-NOPR outlined the FERC's proposal as well as the commission's view of its authority to undertake this rulemaking.

On April 24, 1996 the FERC issued orders 888 and 889 that essentially require all utilities which own, control, or operate transmission lines to file non-discriminatory open access transmission tariffs that offer competitors transmission service comparable to the service which the utility provides itself. The federal commission estimates cost savings from Order 888 at between \$3.8 and \$5.4 billion per year. The FERC bases its assertion that it has the authority to require such open access on its responsibility under sections 205 and 206 of the Federal Power Act "to ensure

that, with respect to any transmission in interstate commerce or any sale of electric energy for resale in interstate commerce by a public utility, no person is subject to any undue prejudice or disadvantage." As the FERC stated in the Mega-NOPR:

Unless all public utilities are required to provide non-discriminatory open access transmission, the ability to achieve full wholesale power competition, and resulting consumer benefits, will be jeopardized. If utilities are allowed to discriminate in favor of their own generation resources at the expense of providing access to others' lower cost generation resources by not providing open access on fair terms, the transmission grid will be a patchwork of open access transmission systems, systems with bilaterally negotiated arrangements, and systems with transmission ordered under section 211. Under such a patchwork of transmission systems, sellers will not have access to transmission on an equal basis, and some sellers will benefit at the expense of others. The ultimate loser will be the consumer.

In addition to ordering open access to transmission, Order 888 recognizes the right of utilities to recover legitimate, prudent and verifiable costs stranded by opening up the wholesale electricity market, i.e. stranded costs. The FERC specified its intention to assign these costs directly to customers leaving the service of the utility (rather than spread among remaining customers), as well as its intention to act as a backstop in the case of retail stranded costs, if states are unwilling or unable to deal with these.

Additionally, the order required public utilities to "functionally unbundle" their power and services for wholesale power transactions, by requiring the internal separation of transmission from generation marketing services. Functional unbundling should act to prohibit a transmission-owning utility from taking advantage of its knowledge of under-utilized capacity on its system to favor the marketing of the utility's generation. This is not "corporate unbundling" or divestiture, when utilities would have to establish separate generation, transmission, and distribution entities, or sell off assets associated with these functions. The FERC is expressly not requiring corporate unbundling, and Order 888 does not address unbundling of retail power purchases.

Also in Order 888 the FERC outlined the principles that it will utilize in deciding whether to approve or disapprove an Independent System Operator (ISO) proposal. The concept of ISOs has swept the industry, developed in the wake of the issuance of the Mega-NOPR. Essentially, an ISO is an independent entity with primary responsibility to oversee and operate the transmission system in a region on an absolutely non-discriminatory basis. The current debate over ISOs involves the extent of their independence from the utilities in the region, and the extent of their authority over systems operation.

Both the commission's policy decisions and its authority to order industry-wide open access is subject to dispute and is certain to be the focus of much litigation and recrimination.

At the same time the FERC issued Order 888, the commission also issued Order 889 and the Capacity Reservation Tariff (CRT) NOPR. Order 889 requires utilities to establish Open Access Same-Time Information Systems (OASIS). The utilities must develop these electronic systems to share information about their available transmission capacity. The CRT NOPR is the FERC's proposal to establish a system for reserving transmission capacity and allowing flexible transmission service pricing.

Minnesota Actions To Promote Competition

Regulators and the Minnesota Legislature have consistently recognized the benefits of competition in certain aspects of the electric utility industry. They have taken several steps in recent years to introduce competitive aspects into the Minnesota regulatory structure. These include

- Encouraging non-utility generation
- Authorizing utilities to offer competitive rates
- Instituting competitive bidding for new generation capacity

Non-Utility Generation

In 1980 the legislature passed a bill introducing several aspects of PURPA into the state's utility structure. The law stated

This section shall at all times be construed in accordance with its intent to give the maximum possible encouragement to cogeneration and small power production consistent with protection of the ratepayers and the public.

Minn. Stat. § 216B.164.

The statute details the MPUC process by which rates for interconnection and wheeling of power are set. In 1981 there was additional legislature encouragement to construct cogeneration facilities:

The legislature finds and declares that significant public benefits may be derived from the cogeneration of electrical and thermal energy and that cogenerated district heating may result in improved utilization and conservation of fuel, the substitution of coal for scarce oil and natural gas, the substitution of domestic fuel for imported fuel, and the establishment of a reliable, competitively priced heat source.

Minn. Stat. § 216B.166.

These statutes embody early attempts by the state to encourage, as PURPA did, certain non-utility generators to compete with the state's utilities.

Similarly, the 1996 Legislature provided an exemption from the personal property tax of up to 100 percent for high efficiency generation facilities. Because current technology only allows certain types of cogeneration facilities to meet the efficiency standard necessary for the full exemption, this tax exemption encourages the construction of high efficiency cogeneration facilities. While utilities may also qualify, this tax exemption may have the effect of encouraging the construction of non-utility generation.

Competitive Rates

In 1990 the legislature enacted legislation allowing some utilities in certain cases to lower their rates for large industrial customers. The statute, passed in order to allow utilities to respond to potential competition (and thus keep large customers from leaving the utility's service grid), provides that

within its own assigned service territory, the utility, at its discretion and using its best judgment at the time, may offer a competitive rate to a customer subject to effective competition.

Minn. Stat. § 216B.162.

Effective competition is defined as "a market situation in which an electric utility serves a customer that . . . has the ability to obtain its energy requirements from an energy supplier" that is not rate regulated by the commission. The commission is required to approve a competitive rate schedule when the provision of service to a customer or a class of customers is subject to effective competition, and the schedule applies only to customers requiring electric service with a connected load of at least 2,000 kilowatts. The commission may approve a competitive rate schedule that applies to customers requiring electric service with a connected load less than 2,000 kilowatts.

Although its intent was to allow utilities to respond when customers have alternative supply options, the competitive rate statute allows certain benefits of competition to be passed on to consumers. The 1995 Legislature reaffirmed this statute's value when it removed the statute's automatic repeal provision. This statute does not encourage competition but it does allow certain customers some of the benefits of competition in the industry.

Competitive Bidding

The 1993 legislature authorized the MPUC to allow competitive bidding for generation resources identified as needed by a utility's integrated resource plan. Each utility is required to develop

a set of resource options that a utility could use to meet the service needs of its customers over a forecast period, including an explanation of the supply and demand circumstances under which, and the extent to which, each resource option would be used to meet those service needs.

Minn. Stat. § 216B.2422.

Subdivision 5 of this section allows a utility to "select resources to meet its projected energy demand through a bidding process approved or established by the commission." Northern States Power asked for the authority to utilize competitive bidding for all new generation acquisitions under this subdivision and the MPUC agreed. Some proponents of wholesale competition suggest that expanding the use of competitive bidding, together with certain other measures, will enable the state to extract the full benefits of wholesale competition.

Current Federal and State Actions to Promote Competition

Federal Actions

At the federal level the FERC will continue to implement orders 888 and 889 and to develop the ideas of the CRT NOPR. Congress is also likely to take some action regarding competition in the electric industry in its next session. In the 104th Congress, Representative Dan Schaefer, R-Colorado and chair of the House Commerce Subcommittee on Energy and Power, introduced the "Electric Consumers' Power to Choose Act of 1996." This legislation, which did not receive much consideration in this past session, would have required all electric utilities (including IOUs, Co-ops and Munis) to provide retail access to all classes of customers by December 15, 2000. If a state did not act to allow or implement retail competition the legislation authorized the FERC to step in. The debate continues over future congressional action. Will Congress continue to move toward mandating a date for retail competition, or choose to emphasize cooperation with states to implement retail competition?

Minnesota (State) Actions

In Minnesota both the MPUC and the MDPS are looking at competition in the electric industry, including potential models for restructuring the industry. In March 1995 the MPUC instituted an investigatory docket entitled "In the Matter of an Investigation into Structural and Regulatory Issues in the Electric Industry." Docket E-999/CI-95-135. In January 1996 the MPUC created a working group of representatives of large, small, and low-income consumers, utilities, power

marketers, environmentalists and regulators to analyze restructuring issues and report its recommendations to the commission. In May 1996 the commission adopted a set of restructuring principles. The commission states that it hopes to achieve three main goals:

- 1) to examine MPUC policies regarding electric utility regulation;
- 2) to provide an opportunity for all stakeholders to discuss possible industry changes; and
- 3) to inform the commission's position on these restructuring issues.

The working group examined issues relating to wholesale competition through the summer of 1996 and has issued its report on those issues to the commission. The group is currently exploring retail issues. The commission will likely not propose legislation in the 1997 session, but will provide advice and counsel to the legislature on these issues.

On June 30, 1995 the MDPS published a critical issues paper "Competition in the Electric Industry: Policies to Serve the Public Interest." In the paper the MDPS stated its position that "introducing competition in the electric industry is pertinent and desirable." The department held a number of workshops and meetings since at which various electric industry stakeholders presented their views. The department indicated it will propose legislation in the 1997 session. The purpose of this legislation will be to introduce additional competition into the Minnesota electric industry, including, perhaps, some measure of competition at the retail level.

Chapter 4

Rate Setting in a Competitive Environment

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Traditional Cost-Based Regulation

Many participants in the restructuring debate want to replace traditional cost-based regulation with more flexible rate-setting procedures such as performance-based regulation (PBR), either as a primary restructuring proposal or as a tool to ease into a more competitive industry.¹⁴ Advocates of this increased emphasis on flexibility contend that even if regulation mimics the discipline of competition it does not provide incentives for maximum efficiency the way that competition would. To a large extent, traditional cost-based regulation are incompatible with some aspects of the evolving electric industry. PBR and other incentive rate-making proposals refer to regulatory efforts to restructure regulation to adapt to a more competitive environment and to provide more incentives to utilities for efficient operation.

The aim of cost-based regulation, also known as cost of service regulation or rate of return regulation (ROR), is to ensure that utilities offer their services at prices that are based on the cost of the services, rather than on the value customers place on those services. In a monopoly market, absent regulation, the utility would price its services at whatever the market would bear in order to serve the utility's private interest - maximizing profits. Allowing this practice to go unregulated would result in unreasonably high prices for electricity. This would price many customers out of the market, a violation of the universal service goal that policymakers have set for the industry. It would also increase the cost of goods and services for which electricity is an input.

In Minnesota as elsewhere in the U.S. the rates for electricity have traditionally been calculated using cost-based regulation. The goal of cost-based regulation is to balance "the public need for adequate, efficient, and reasonable service" against "the need of the public utility for revenue sufficient to enable it to meet the cost of furnishing the service . . ." (Minn. Stat. § 216B.16, subdivision 6)

In cost-based regulation, a regulatory commission such as the MPUC undertakes an administrative proceeding—a rate case—in three principal steps:

Step one determines the revenue requirement, i.e. the reasonable and prudent cost of providing utility service

Step two allocates the requirement among customer classes

Step three translates the allocated revenue requirement into rates.

¹⁴ Sources for this chapter include materials prepared and presented by Johannes M. Bauer at the Annual Regulatory Studies Program at Michigan State University, July 31 to August 4, 1995.

From Revenue Requirement to Rates

The revenue requirement is the utility's expenses (based on a test-year period) plus the cost of the capital invested and committed to utility operations. Minn. Stat. section 216B.16, subdivision 6. The utility's expenses include

- Operating expenses, such as wages and salaries, and maintenance costs
- Annual depreciation on capital investments, such as generation facilities
- Taxes, such as income and property taxes

In a rate case these expenses are reviewed by the MPUC and may be disallowed or not recognized as legitimate expenses for the provision of service. If the expenses are disallowed, they may not be passed on to customers in rates. They must be either eliminated from the company's operations or borne by the utility's shareholders.

The next step in estimating the revenue requirement is determining the rate base. The rate base is the capital upon which the utility is allowed to receive a rate of return. In calculating the rate base, the MPUC

shall give due consideration to evidence of the cost of the property when first devoted to public use, to prudent acquisition cost to the public less appropriate depreciation on each, to construction work in progress, to offsets in the nature of capital provided by sources other than the investors, and to other expenses of a capital nature.

Minn. Stat. § 216B.16, subd. 6.

Thus, the rate base is a measure of the capital that a utility has committed to the provision of its services, the vast majority of which is termed "plant in service." Plant in service refers to facilities "used and useful" for rendering electric service to the public.

After determining the rate base the MPUC must calculate the allowable rate of return on that capital, or as the concept is often stated, the opportunity cost of the capital committed to utility service. The opportunity cost of the capital is measured by the opportunities lost by not investing those funds in another activity; utility shareholders should receive a rate of return equivalent to investments in similar risk categories.

Multiplying the allowed rate of return by the rate base results in the required amount of return on that capital. This amount added to the utility's expenses is the total revenue requirement of the utility. The revenue requirement is then allocated among the various customer classes (e.g., residential, commercial and industrial). A rate is then designed for each customer class which that allows the utility to recover its revenue requirement.

Perceived Disadvantages of Cost-Based Regulation

Critics argue that cost-based regulation allows the utility and its shareholders to pass on all of the utility's costs and risks to its ratepayers. Because the utility faces minimal risks, the utility has little or no incentive to increase its operating efficiency, or to minimize expenses. Cost-based regulation "fails to penalize inefficient producers or reward efficient ones."¹⁵ Inefficient electric utilities cause a drag on the economy, resulting in a decrease in social welfare and increased costs to ratepayers.

Defenders of the current system counter that cost-based regulation provides more incentives for efficient operation than its detractors acknowledge. For example, the authority of the MPUC to disallow utility expenses encourages the utility to be efficient and prudent. In addition, since a utility may be involved in a rate case to set its rates only once every few years there is a "regulatory lag." Utilities base rates on past estimates of expenses. Therefore, the utility has an incentive to minimize expenses between rate cases, recouping the difference between its estimated revenue requirements and its actual expenses. Utilities successful at reducing costs between rate cases may even earn a rate of return higher than that set by the MPUC.

Another perceived disadvantage of cost-based regulation is that the utility knows its own expenses much better than regulators (a condition economists call information asymmetry). The utility may be able to inflate its expense estimates, or pad the rate base, thereby increasing its revenue requirement. In addition, cost-based regulation is criticized as being too inflexible and expensive because a rate case may result in significant administrative costs.

Incentive Regulation

Incentive regulation refers to a variety of regulatory approaches, including PBR. These approaches attempt to provide or enhance incentives for utilities to achieve desired goals, such as operational efficiency or conservation targets, inserting a system of rewards and penalties into the regulatory structure, and increase the ability of utilities to meet competitive demands.

¹⁵ Ros, Agustin J. and Harvill, Terry S. "Incentive Ratemaking in Illinois: The Transition to Competitive Markets," **Public Utilities Fortnightly**, July 15, 1995, p. 22.

Incentive Regulation Options

Regulatory options can be ranked by the extent regulators are required to intrude into the activities of the regulated utility in order to ensure compliance with public policy goals. The goal for policymakers is to utilize the regulatory option that grants regulators the tools they need to ensure public policy goals are being met, while allowing the regulated utilities the flexibility to meet those goals, benefiting both shareholders and customers.

Incentive regulation essentially holds that utilities will act to meet public policy goals, without undue and expensive oversight by regulators, if given proper incentives. The key may be to balance the importance of a particular policy goal with the utility's preference for self-control, in light of the strength of the incentives facing the utility. If policymakers believe that a certain policy goal is so important that they will accept little or no risk in ensuring that goal is met, a more aggressive regulatory tool may be necessary if the utility's incentives to meet that goal are not considered sufficiently strong by policymakers.

For example, policymakers have long considered universal service a very important, if not crucial, policy goal for the electric industry. However, utilities face disincentives to ensuring universal service. Low-income customers may be more likely to not pay their bills than other customers, thus, utilities may face an incentive to not extend service to these customers. As a result, policymakers have required the provision of universal service as an explicit condition of a utility's charter to provide electricity service in Minnesota. This "command and control" type of regulatory tool is among the strongest and most intrusive options that can be used to meet policy goals and many argue as a result that it should be used sparingly.

In the new competitive electric industry environment, policymakers will face additional pressure to allow regulators and utilities additional tools and flexibility to meet the needs of the changing industry. Several incentive regulatory options are described below, including flexible regulation, targeted incentive plans, external performance indexing, price and revenue caps and PBR. Some of these tools are already at work in the Minnesota regulatory framework; others would be new additions.

■ **Flexible Regulation** attempts to increase the flexibility of cost-based regulation. Examples include allowing utilities to

- Charge rates within an acceptable range
- Unilaterally flex rates downward
- Negotiate rates with specific customer classes, subject to regulatory approval

■ **Targeted Incentive Plans** seek to improve the effectiveness of cost-based regulation by providing performance incentives for specific, well-defined areas of utility activity. Sample activities of a targeted incentive plan might include

- Efficient fuel purchases
- Increased capacity or investment in infrastructure
- Demand-side management or conservation

■ **External Performance Indexing** uses an external benchmark to measure a utility's performance. One possible benchmark is the performance of other similarly situated utilities. Examples include

- Pricing production inputs
- Ranking electricity rates
- Ranking average customer bills
- Measuring service quality

■ **Price and Revenue Caps** set an upper limit on the prices of a utility but do not directly control its profits. Revenue caps guarantee a utility a certain income, but decouple that income from the amount of sales the utility makes. Revenue caps are sometimes suggested as a way to maximize conservation and demand-side management goals.

Both price and revenue caps can be used with external performance indexing to measure a utility's performance. Thus, both price and revenue caps can specifically consider service quality measures or environmental factors.

■ **Performance-Based Regulation** packages many incentive utility regulation options in a more comprehensive way instead of focusing on one specific element.

There are three basic components to a PBR plan.¹⁶

1. An accurate (i.e. not inflated) baseline revenue requirement
2. A package of incentives to encourage the utility to operate below this baseline revenue requirement
3. A "quality control mechanism to ensure that the utility does not pursue cost savings at the expense of system reliability, safety, customer satisfaction, and other measures of quality."¹⁷

The PBR plan should allow for the baseline revenue requirement to be adjusted over time for inflation. In addition, the baseline should be offset by advances in productivity from new technology and new techniques.

A provision to allow customers to share in the savings produced by the plan may be built into the plan, but the ratio of sharing between utility and customer should not impair the utility's incentive to maximize these savings.

Criticisms of PBR and Other Incentive Regulation Tools

The ability of PBR to address the perceived disadvantages of cost-based regulation is currently the subject of intense debate among utilities, regulators and analysts. Advocates of PBR claim that it reduces or avoids the potential problems of cost-based regulation outlined above, and induces utilities to achieve efficiency gains that leave both customers and shareholders better off. PBR opponents argue that PBR has many potential pitfalls, such as

- the selection of inappropriate performance benchmarks
- the temptation to incorporate too many, or contradictory, societal or regulatory goals, into the PBR plans
- unreasonable returns to shareholders or
- exacerbating the "information asymmetry" between utilities and regulators.

¹⁶ See generally Navarro, Peter. "The ABCs of PBR," **Public Utilities Fortnightly**, July 15, 1995, p. 16-20.

¹⁷ **Id.** at 16.

Some argue that, if designed appropriately, PBR can be used to provide incentives that will better mimic competitive forces. Thus, utilities may operate more efficiently and effectively than currently, with comprehensive and expensive regulatory oversight.

Others, however, suggest that to do PBR well, regulators must be provided with more, not less, information than they currently have access to. In addition, administrative oversight, at least for the short term, may need to increase rather than decrease. Utilities under PBR would still control the information upon which their incentives are based, and would still be motivated to maximize profits. Given these fundamentals, a utility will have reason to

- Fashion a PBR plan that incorporates too easily achieved benchmarks
- Provide regulators only with information that serves the interest of the utility

Policymakers considering a plan to incorporate PBR into the regulatory structure of the electric industry should determine whether or not the PBR proposal adequately addresses those concerns.

Finally, it should be noted that incentive regulation, including PBR, raises additional concerns for some economists when it is used as a transition tool for competition. These economists believe that incentive regulation may make the development of a truly competitive market structure difficult or impossible to achieve. Incentive regulation, by definition, gives utilities flexibility to lower costs and rates. If used as a transition tool, utilities under incentive regulation can reduce rates in a predatory fashion, to reduce the price of their services to the point where competitors are unlikely to enter the market once the market is open to competition. Thus, some economists believe incentive regulation a poor transition tool which could cause the regulated monopoly industry to become an unregulated tight oligopoly industry. Used in this way, incentive regulation could result in a transition to an uncompetitive energy industry. ♦

Glossary

Aggregation refers both

- to the development and management of a power portfolio, combining power from a variety of sources in order to match the demand for power with adequate power supply and
- to the development and management of a portfolio of customers, combining the demand of a number of customers in order to economically serve those customers.

Aggregators refer to entities that aggregate customer demand in order to leverage better prices for electricity than those customers individually could obtain. Aggregators include utilities, power marketers and power brokers.

Ancillary services are a number of services that are necessary to effect a transfer of electricity between a seller and a buyer and to coordinate generation, transmission and distribution in order to maintain power quality and system stability.

APPs or affiliated power producers are wholesale generators that are affiliated with a utility.

Avoided Cost means the cost of the electricity to the utility which, but for the purchase from the QF, the utility would generate or purchase from another source.

Bundled rates are rates which reflect a single price for generation, transmission, distribution and other services.

Captive customers are those small (low load factor/low density) customers who individually do not have leverage to bring to bear against utility rate increases; generally speaking, these are residential and small business consumers.

Cogeneration is the sequential generation of thermal energy, usually as steam, and electricity.

CON means Certificate of Need.

Co-ops or Rural Electric Cooperatives are utilities organized under Minnesota Chapter 308A. Co-ops are not generally subject to rate regulation by the MPUC unless the members of the Co-op elect to be so regulated. The MPUC does regulate Co-ops with regard to Certificates of Need for power plants, the assignment of service territories, energy conservation spending and formal service complaints.

Corporate Unbundling refers to the restructuring of a vertically integrated utility into separate generation, transmission, and distribution entities, or sell off assets associated with these functions.

Cost-Based Regulation - See **Rate of Return Regulation**.

Cost-Shifting refers to the inappropriate shifting of costs from one class of customers to another.

Cost of Service Regulation - See **Rate of Return Regulation**.

Comparability Standard is the standard that FERC now applies to open access transmission tariffs. In effect, the standard requires that controllers or owners of transmission facilities must allow third parties access on the same or comparable basis, and under the same or comparable terms and conditions, as the controller's or owner's uses of the system.

Competition refers to both a process of rivalry among suppliers for customers, and a stable market structure in which a number of comparable suppliers compete to provide goods and services to a number of comparable customers. These are not the same; that is, rivalry will not necessarily lead to a stable competitive market structure.

CTC or Competition Transition Charge is a fee that would be charged to all customers connected to the utility's service facilities in order to allow utilities to recover for stranded transition costs.

Direct Access - See **Retail Competition**.

Distribution involves the retail sale of electricity directly to consumers.

Economies of Scale result when the per unit cost of production decreases as more units are produced.

Economies of Scope refer to markets in which producing multiple services jointly result in lower costs to the producer than having multiple firms produce those services separately.

Effective Competition is defined in Minnesota Statutes as a market situation when an electric utility serves a customer that has the ability to obtain its energy requirements from an energy supplier not rate-regulated by the MPUC.

Eligible Facility is defined by EPAct (for the purposes of designating Exempt Wholesale Generators) as "a facility, wherever located, which is either used for the generation of electric energy exclusively for sale at wholesale, or used for the generation of electric energy and leased to one or more public utility companies."

Enlargement is the siting and construction of transmission capacity necessary to provide the services requested by a petitioner.

EPAct is the Energy Policy Act of 1992.

EWGs or Exempt Wholesale Generators are a class of independent power producers who operate eligible facilities, which were exempted from PUHCA by EPAct.

Exclusive Service Territory is the territory assigned to a utility pursuant to Minnesota Statutes, section 216B.40.

Externalities or Environmental Costs are costs caused by the environmental impacts of a generation facility.

FERC is the Federal Energy Regulatory Commission.

Functional Unbundling refers to the restructuring of vertically integrated electric utilities into separate and distinct departments which reflect the separate functions (generation, transmission and distribution), but which does not involve the creation of separate corporate entities.

Generation refers to the actual creation of electricity, which can be generated using a number of methods and fuels, i.e. nuclear, coal, hydro, or wind.

Green Power Programs are programs to market renewable power to retail utility customers at market prices.

G&Ts or Generation and Transmission Cooperatives are co-ops that generate and transmit power at wholesale for distribution.

IOUs or Investor-Owned Utilities are privately-owned utilities, which are owned by shareholders and rate regulated by the PUC. The IOUs are "vertically integrated" utilities, in that the IOUs generate, transmit, and distribute their own electricity (in addition to purchasing power from others).

IPPs or Independent Power Producers are non-utility wholesale generators.

IRP means Integrated Resource Planning.

ISO or Independent System Operator is an independent entity whose primary function would be to oversee and operate the transmission system in a region on a non-discriminatory basis.

MAPP or the Mid-Continent Area Power Pool is the power pool to which the utilities of Minnesota and other midwestern states, as well as those of a couple of Canadian provinces, belong.

Market-Based Rates are set between willing sellers and buyers of power, instead of being based on the costs incurred by the power generator in producing the power.

Market power refers to the ability of a dominant actor in a market to increase prices without experiencing a decline in revenues.

Merchant plants are generation facilities which are not built to serve a utility's load and are not placed in a utility's rate base. Instead, such facilities are meant to generate electricity for sale in a competitive market.

Munis or Municipal Electric Utilities are owned and operated by municipalities and overseen by municipal governments. These entities are not rate regulated by the MPUC, but are subject to regulation with regard to Certificates of Need for power plants, the assignment of service territories, energy conservation spending and formal service complaints.

Municipal Power Agencies are entities formed under Minnesota Statutes chapter 453 by two or more municipalities to provide generation, transmission, aggregation and ancillary services to municipal utilities.

MDPS is the Minnesota Department of Public Service.

MDOR is the Minnesota Department of Revenue.

MEQB is the Minnesota Environmental Quality Board.

MPCA is the Minnesota Pollution Control Agency.

MPUC is the Minnesota Public Utility Commission.

Natural Monopoly refers to a market condition where one service provider can serve customers more efficiently than several or many competing service providers.

Network Service is a type of transmission access that permits a competitor to fully integrate load and resources on an instantaneous basis in a manner similar to the transmission owner's integration of its own load and resources.

NERC is the North American Electricity Reliability Council.

Obligation to Serve refers to the obligation public utilities have under statute to serve all customers within their exclusive service territories.

Open Access Transmission Tariffs are rate tariffs which, once filed with FERC, allow competitors to use the transmission facilities controlled by the filing utility to transmit their power at the rates listed in the filed tariff. Such tariffs can either allow point to point service or network service or both.

Order 888 is the FERC order which required all transmission owning utilities to file open access transmission tariffs.

PBR or Performance-Based Regulation refers to a host of regulatory approaches that attempt to provide or enhance incentives for utilities to achieve desired goals such as efficiency of operations or conservation targets by inserting rewards and penalties into the regulatory structure.

Point to Point Service is a type of transmission access, involving designated points of entry into and exit from the transmitting utility's system, with a designated amount of transfer capability at each point.

Power Marketing Administrations or PMAs are large scale wholesale generator owned by the federal government which produces power for resale.

PUHCA is the Public Utility Holding Corporation Act of 1935.

PURPA is the Public Utility Regulatory Policies Act of 1978.

QFs or Qualifying Facilities are a class of independent power producers that meet certain size and type of generation requirements imposed by PURPA. PURPA then confers certain benefits, namely the requirement that utilities purchase their capacity and energy at the utility's avoided cost.

Rate Base refers to the total amount of capital a utility has committed to providing utility service.

Rate Case is an administrative proceeding to determine the appropriate rates that a utility should charge.

Rate of Return refers to the cost of capital, i.e. the amount of return that investors in the utility should receive on their investment.

Rate Unbundling means the allocation of costs associated with the various utility functions such that each of those costs can be separately and accurately stated.

Regional Reliability Councils are voluntary entities formed by utilities oversee electric system operations and to promote the reliability of electric supply in the North American continent. Together, the regional reliability councils form NERC. The regional reliability council for this region is MAPP.

Regulatory Compact is a term some use to describe a purported agreement between society and a utility in which each utility is given a monopoly on service within a service territory and permitted to recover reasonable and prudent expenses associated with its provision of service, plus a reasonable return on its investments in exchange for the utility's obligation to serve all customers within its service territory and to provide quality service at just and reasonable rates.

Regulatory Lag refers to the time between rate cases, when a utility can recover more than its allowed rate of return by operating more efficiently or by selling more electricity than assumed in the previous rate case.

Restructuring means the process of amending the structure of the electric industry, through deregulating and re-regulating in order to introduce additional competition into the industry structure.

Retail Competition refers to competition in the retail sector of the electric industry, generally with reference to the generation function. It is the ability to transmit one's power through the transmission facilities of another for sale to a third party at retail, or as defined by EPAct, "the transmission of electric energy directly to an ultimate consumer." Also called **Direct Access** and **Retail Wheeling**.

Retail Wheeling - See **Retail Competition**.

RTG or Regional Transmission Group refers to an entity which provides regional transmission system planning and integration for its members. As of November, MAPP became a FERC-approved RTG.

ROR Regulation or Rate of Return Regulation refers to regulation that forces utilities to offer their services at prices that are based on the cost of the services, rather than on the value that customers place on those services. Also called **Cost of Service or Cost-Based Regulation**.

RPS or Renewable Portfolio Standard is a program to encourage the development of renewable energy by mandating that each entity selling power at retail include a certain percentage of renewable power in its portfolio.

Section 211 is the section added by PURPA and amended by EPAct that authorizes FERC to order wholesale wheeling.

Self-generation refers to industrial entities that have constructed their own generation facilities to meet all or part of their demand for electricity.

Stranded Benefits refer to the benefits associated with the current regulatory structure that may be lost in moving to a more competitive structure. Such benefits include energy efficiency mandates, low-income rate programs, and environmental standards.

Stranded Costs or stranded investments refer to financial obligations incurred by utilities to serve customers in a regulated market which will be unrecoverable in an unregulated market. One example of a stranded cost is an investment in a generation plant that a utility may have made in order to fulfill their obligation to serve, but which will not be needed in a more competitive environment.

Transition Costs refer to the wide variety of costs that will be incurred in a transition to a more competitive environment, such as stranded costs, costs associated with unbundling utility structures and costs associated with forming an ISO.

Transmission lines carry the electricity over long distances at high voltage from the generation plant to the distribution substation, where the electricity is "stepped down" (the voltage is reduced) for distribution to residential, commercial and industrial customers.

Transmission grid refers to the interconnection of a number of individual, utility-owned transmission systems which are interconnected to facilitate system reliability and transfer of power from one utility to another.

Transmitting Utility means (for the purposes of a section 211 order) any electric utility, qualifying cogeneration facility, qualifying small power production facility, or federal power marketing agency which owns or operates electric transmission facilities, used for the sale of electric energy at wholesale.

Unbundling can refer either to:

- **structural unbundling**, which means the dis-integration of the utility structure

or

- **rate unbundling**, which refers to the allocation of costs associated with the various utility functions such that each of those costs can be separately and accurately stated.

Wholesale Competition refers to competition in the wholesale sector of the electric industry, generally with reference to the generation function.

Wholesale Wheeling means the ability to transmit one's power through the transmission facilities of another for sale to a third party at wholesale.